European Commission

MARINE-RELATED PROJECTS

Funded in

2014 – 2015

In Societal Challenges 1, 3, 4, and 5; in Research Infrastructures; in Leadership in Enabling and Industrial Technologies (LEIT); in the European Research Council; in the Marie-Skłodowska-Curie Actions Work; and in Science with and for Society Work Programmes

Research and Innovation


European
Commission

MARINE-RELATED PROJECTS

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2014 – 2015

In Societal Challenges 1, 3, 4, and 5; in Research Infrastructures; in Leadership in Enabling and Industrial Technologies (LEIT); in the European Research Council; in the Marie-Skłodowska-Curie Actions Work; and in Science with and for Society Work Programmes

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European
Commission

Introduction

Due to the crosscutting nature of marine ecosystems, marine and maritime challenges are addressed in many Societal Challenges and Work Programmes of Horizon 2020.

Through Horizon 2020, several different marine and maritime sectors have been covered under the following funding schemes:

- Societal Challenge 1: Health, Demographic Change and Wellbeing;
- Societal Challenge 3: Secure, Clean and Efficient Energy;
- Societal Challenge 4: Smart, Green and Integrated Transport;
- Societal Challenge 5: Climate Action, Environment, Resource Efficiency and Raw Materials;
- Excellent Science: EUROPEAN RESEARCH COUNCIL (ERC);
- Excellent Science: Marie-Skłodowska-Curie Actions;
- Excellent Science: European Research Infrastructures;
- Introduction to Leadership in Enabling and Industrial Technologies (LEIT);
- Science with and for Society.


European
Commission

2014

Societal Challenge 3: Secure, Clean and Efficient Energy

Call – COMPETITIVE LOW-CARBON ENERGY


European
Commission

At a glance

Acronym: CEFOW

Title: Clean energy from ocean waves

Call: H2020-LCE-2014-2

Instrument: Innovation action

Start date: 01/06/2015

End date: 31/05/2020

Duration: 60 months

Total Cost: € 24,717,113.75

EC Contribution: € 16,998,022.13

Consortium: 9 partners

Project Coordinator: FORTUM OYJ, FI

CEFOW

Clean energy from ocean waves

Abstract

The most advanced wave power demonstrations today have showed the feasibility of power generation with single device deployments and MW-scale performance within several testing periods of several years. The next step beyond this is to deploy multiple wave energy converters in MW-scale with improved power generation capability and demonstrate that they are able to survive rough sea conditions over a period of several years. Clean Energy From Ocean Waves (CEFOW) project has an exceptionally good starting point. It has an existing site reservation in a wave power testing centre called Wave Hub, with all the needed infrastructure, including grid connection already in place. In addition, the wave energy converter technology to be deployed in the project has already been tested and proven in real conditions in Scotland. The ultimate purpose of the CEFOW is to increase the speed of wave power development, decrease the levelised cost of ocean energy by improving technical solutions used for multiple device system, and create an efficient supply chain to support larger wave power projects in the future. To reach these targets, the CEFOW consortium will improve the wave energy converter performance by 50% and raise its availability to 70%; develop new types of dynamic mooring and electrical connections suitable for multi-device deployment and deploy 3MW (three 1MW units) wave energy converters in real world offshore conditions in a grid-connected testing environment. In addition, CEFOW will study the feasibility of on-board and on-shore storage solutions and conduct thorough multi-year environmental, health and safety studies. The consortium spans the full value chain from research organisations to wave converter technology developers, marine service providers and a large multinational utility company as the operator.

Project's Partners List

CEFOW

Clean energy from ocean waves

Project's partners	Name	Country
1	FORTUM OYJ	FI
2	WELLO OY	FI
3	MOJO MARITIME LIMITED	UK
4	WAVE HUB LIMITED	UK
5	UPPSALA UNIVERSITET	SE
6	GREEN MARINE(UK)LTD	UK
7	FORTUM ENERGY LTD	UK
8	UNIVERSITY OF PLYMOUTH	UK
9	THE UNIVERSITY OF EXETER	UK

LIFES 50plus

Qualification of innovative floating substructures for 10MW wind turbines and water depths greater than 50m

At a glance

Acronym: LIFES 50plus

Title: Qualification of innovative floating substructures for 10MW wind turbines and water depths greater than 50m

Call: H2020-LCE-2014-1

Instrument: Research and Innovation action

Start date: 01/06/2015

End date: 30/09/2018

Duration: 40 months

Total Cost: € 7,274,837.50

EC Contribution: € 7,274,837.50

Consortium: 12 partners

Project Coordinator: NORSK MARINTEKNISK FORSKNINGSINSTITUTT AS, NO

Abstract

The focus of the project will be on floating wind turbines installed at water depths from 50m to about 200m. The consortium partners have chosen to focus on large wind turbines (in the region of 10MW), which are seen as the most effective way of reducing the Levelized Cost of Energy (LCOE). The objective of the proposed project is two-fold: 1. Optimize and qualify, to a TRL5 level, two (2) substructure concepts for 10MW turbines. The chosen concepts will be taken from an existing list of four (4) TRL>4 candidates currently supporting turbines in the region of 5MW. The selection of the two concepts will be made based on technical, economical, and industrial criteria. An existing reference 10MW wind turbine design will be used throughout the project. 2. More generally, develop a streamlined and KPI-based methodology for the design and qualification process, focusing on technical, economical, and industrial aspects. This methodology will be supported by existing numerical tools, and targeted development and experimental work. It is expected that resulting guidelines/recommended practices will facilitate innovation and competition in the industry, reduce risks, and indirectly this time, and contribute to a lower LCOE. End users for the project deliverables will be developers, designers and manufacturers, but also decision makers who need to evaluate a concept based on given constraints. The proposed project is expected to have a broad impact since it is not led by single group of existing business partners, focusing on one concept only. On the contrary, it will involve a strong consortium reflecting the value chain for offshore wind turbines: researchers, designers, classification societies, manufacturers, utilities. This will ensure that the project's outcomes suit the concrete requirements imposed by end-users.

Project's Partners List

LIFES 50plus

Qualification of innovative floating substructures for 10MW wind turbines and water depths greater than 50m

Project's partners	Name	Country
1	NORSK MARINTEKNISK FORSKNINGSINSTITUTT AS	NO
2	DANMARKS TEKNISKE UNIVERSITET	DK
3	OFFSHORE RENEWABLE ENERGY CATAPULT	UK
4	POLITECNICO DI MILANO	IT
5	FUNDACION TECNALIA RESEARCH & INNOVATION	ES
6	FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA	ES
7	UNIVERSITAET STUTTGART	DE
8	IBERDROLA INGENIERIA Y CONSTRUCCION SA	ES
9	DR TECHN OLAV OLSEN AS	NO
10	RAMBOLL MANAGEMENT CONSULTING GMBH	DE
11	GERMANISCHER LLOYD INDUSTRIAL SERVICES GMBH	DE
12	IDEOL	FR

RiCORE

Risk Based Consenting of Offshore Renewable Energy Projects

At a glance

Acronym: RiCORE

Title: Risk Based Consenting of Offshore Renewable Energy Projects

Call: H2020-LCE-2014-3

Instrument: Coordination & support action

Start date: 01/01/2015

End date: 30/06/2016

Duration: 18 months

Total Cost: € 1,393,532.50

EC Contribution: € 1,393,532.50

Consortium: 6 partners

Project Coordinator: THE ROBERT GORDON UNIVERSITY, UK

Abstract

The consenting of offshore renewable energy is often cited as one of the main non-technical barriers to the development of this sector. A significant aspect of this is the uncertainty inherent in the potential environmental impacts of novel technology. To ensure consents are compliant with EU and national legislation, such as the Environmental Impact Assessment and Habitats Directive, costly and time consuming surveys are required even for required even for perceived lower risk technologies in sites which may not be of highest environmental sensitivity. It is therefore the aim of the RiCORE project to establish a risk-based approach to consenting where the level of survey requirement is based on the environmental sensitivity of the site, the risk profile of the technology and the scale of the proposed project. RiCORE will study the legal framework in place in the partner Member States to ensure the framework developed will be applicable for roll out across these Member States and further afield. The next stage of the RiCORE project is to consider the practices, methodologies and implementation of pre-consent surveys, post-consent and post-deployment monitoring. This will allow a feedback loop to inform the development of the risk-based framework for the environmental aspects of consent and provide best practice. The project will achieve these aims by engaging with the relevant stakeholders including the regulators, industry and EIA practitioners, through a series of expert workshops and developing their outcomes into guidance. The impact of the project will be to improve, in line with the requirements of the Renewable Energy Directive specifically Article 13 (1), consenting processes to ensure cost efficient delivery of the necessary surveys, clear and transparent reasoning for work undertaken, improving knowledge sharing and reducing the non-technical barriers to the development of the Offshore Renewable Energy sector so it can deliver the clean, secure energy.

Project's Partners List

RiCORE

Risk Based Consenting of Offshore Renewable Energy Projects

Project's partners	Name	Country
1	THE ROBERT GORDON UNIVERSITY	UK
2	MARINE SCOTLAND	UK
3	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
4	WAVEC/OFFSHORE RENEWABLES - CENTRO DE ENERGIA OFFSHORE ASSOCIACAO	PT
5	FUNDACION AZTI - AZTI FUNDAZIOA	ES
6	E-CUBE STRATEGY CONSULTANTS	FR

At a glance

Acronym: WETFEET

Title: Wave Energy Transition to Future by Evolution of Engineering and Technology

Call: H2020-LCE-2014-1

Instrument: Research and Innovation action

Start date: 01/05/2015

End date: 30/04/2018

Duration: 36 months

Total Cost: € 3,456,883.75

EC Contribution: € 3,456,883.25

Consortium: 12 partners

Project Coordinator: WAVEC/OFFSHORE RENEWABLES - CENTRO DE ENERGIA OFFSHORE ASSOCIACAO, PT

WETFEET

Wave Energy Transition to Future by Evolution of Engineering and Technology

Abstract

The recent experience with ocean wave energy have revealed issues with reliability of technical components, survivability, high development costs and risks, long time to market, as well as industrial scalability of proposed and tested technologies. However the potential of wave energy is vast, and also positive conclusions have been drawn, in particular that wave energy is generally technically feasible. Having substantial insight into successes and drawbacks in past developments and existing concepts, the promoters have identified 'breakthrough features' that address the above mentioned obstacles, i.e. components, systems and processes, as well as the respective IP. These breakthroughs are applied to two wave concepts, the OWC and the Symphony, under development by members of the consortium. The following main avenues have been identified: 1. Survivability breakthrough via device submergence under storm conditions; 2. O&M (operation and maintenance) breakthrough via continuous submergence and adaption of components and strategies; 3. PTO breakthrough via dielectric membrane alternatives to the "classical" electro-mechanical power take-off equipment; 4. Array breakthrough via sharing of mooring and electrical connections between nearby devices, as well as integral approach to device interaction and compact aggregates; WETFEET addressees Low-carbon Energies specific challenges by targeting a set of breakthroughs for wave energy technology, an infant clean energy technology with vast potential. The breakthrough features of WETFEET are developed and tested on the platform of two specific converter types (OWC and Symphony) with near-term commercial interest, and a large part of the results can make a general contribution to the sector, being implemented in other technologies.

Project's Partners List

WETFEET

Wave Energy Transition to Future by Evolution of Engineering and Technology

Project's partners	Name	Country
1	WAVEC/OFFSHORE RENEWABLES - CENTRO DE ENERGIA OFFSHORE ASSOCIACAO	PT
2	TEAMWORK TECHNOLOGY BV	NL
3	INSTITUTO SUPERIOR TECNICO	PT
4	EDP INOVACAO SA	PT
5	THE UNIVERSITY OF EDINBURGH	UK
6	UNIVERSITY OF PLYMOUTH	UK
7	INNOSEA	FR
8	SCUOLA SUPERIORE DI STUDI UNIVERSITARI E DI PERFEZIONAMENTO SANT'ANNA	IT
9	UNIVERSITAT LINZ	AT
10	SELMAR SRL	IT
11	TRELLEBORG RIDDERKERK BV	NL
12	AURORA VENTURES LIMITED	UK

2014

Societal Challenge 4: Smart, Green and Integrated Transport

Call - 'MOBILITY FOR GROWTH'

E-ferry

E-ferry – prototype and full-scale demonstration of next generation 100% electrically powered ferry for passengers and vehicles

At a glance

Acronym: E-ferry

Title: E-ferry – prototype and full-scale demonstration of next generation 100% electrically powered ferry for passengers and vehicles

Call: H2020-MG-2014_TwoStages

Instrument: Innovation action

Start date: 01/06/2015

End date: 31/05/2019

Duration: 48 months

Total Cost: € 21,347,852.75

EC Contribution: € 16,001,856.50

Consortium: 12 partners

Project Coordinator: AERO KOMMUNE, DK

Abstract

E-ferry addresses the urgent need for reducing European CO2 emissions and air pollution from waterborne transportation by demonstrating the feasibility of a 100% electrically powered, emission free, medium sized ferry for passengers and cars, trucks and cargo relevant to island communities, coastal zones and inland waterways. The vessel will be based on a newly developed, energy efficient design concept and demonstrated in full-scale operation on longer distances than previously seen for electric drive train ferries (> 5 Nm), i.e. the medium range connections Soeby-Fynshav (10.7 Nm) and Soeby-Faaborg (9.6 Nm) in the Danish part of the Baltic Sea, connecting the island of Aeroe (Ærø) to the mainland. E-ferry builds on the Danish ERDF funded project Green Ferry Vision proving feasibility of the concept to be demonstrated and indicating significant potential impacts compared to conventionally fuelled ferries operating on the same medium range routes; energy savings of up to 50%, annual emission reductions of approx. 2,000 tonnes CO2, 41,500 kg NOx, 1,350 kg SO2 and 2,500 kg particulates. E-ferry is likely to be the one with the largest battery-pack ever installed in a ferry with a record breaking high charging power capacity of up to 4 MW allowing for short port stays. On top of being 100% powered by electricity, the innovative novelties of the E-ferry design concept and its expected impacts addresses flaws in current state-of-the-art by demonstrating a concept based on optimised hull-shape, lightweight equipment and carbon composite materials, ensuring reduced weight by up to 60% on parts replaced by composite elements. Approval of the use of carbon fibre-reinforced composite modules in E-ferry's superstructure according regulation through material and fire testing also is key to the project. The strong industrial, maritime and public partners also will assure dissemination of results and push for a widespread market up-take of the E-ferry concept.

Project's Partners List

E-ferry

E-ferry – prototype and full-scale demonstration of next generation 100% electrically powered ferry for passengers and vehicles

Project's partners	Name	Country
1	AERO KOMMUNE	DK
2	SIEMENS AS	NO
3	DNV GL AS	NO
4	SØFARTSSTYRELSEN	DK
5	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	EL
6	DANSK BRAND- OG SIKRINGSTEKNISK INSTITUT FORENING	DK
7	RADGIVENDE SKIBSINGENIORER JENS KRISTENSEN APS	DK
8	SOBY VAERFT AS	DK
9	TUCO YACHT VÆRFT APS	DK
10	VISEDO OY	FI
11	LECLANCHE GMBH	DE
12	LECLANCHE SA	CH

At a glance

Acronym: EfficienSea 2

Title: EfficienSea 2 - Efficient, Safe and Sustainable Traffic at Sea

Call: H2020 -MG-2014_TwoStages

Instrument: Innovation action

Start date: 01/05/2015

End date: 30/04/2018

Duration: 36 months

Total Cost: € 11,482,500.89

EC Contribution: € 9,822,818.16

Consortium: 32 partners

Project Coordinator: SØFARTSSTYRELSEN, DK

EfficienSea 2

EfficienSea 2 - Efficient, Safe and Sustainable Traffic at Sea

Abstract

The trend in navigational accidents no longer appears to decrease. In a Formal Safety Assessment (IMO NAV59-6, Annex 1) 5.544 navigational and 7.275 other accidents resulted in the loss of 6.264 lives (2001-2010). The coincide of EU policies on safer and more efficient waterborne operations and in particular the e-maritime initiative with IMO's strategy for e-navigation opens a unique window of opportunity to influence the maritime sector and make substantial impact. Funding of EfficienSea 2 will enable the consortium to exploit this window of opportunity, supporting EU policies and marine traffic management through services to: 1. Improve navigational safety and efficiency 2. Improve Arctic navigation and emergency response 3. Decrease administrative burdens 4. Improve environmental monitoring & enforcement Lasting impact will be ensured by five enabling actions: 1. Development of the Maritime Cloud – a communication framework for both e-maritime and e-navigation - enabling efficient sharing of information between all maritime stakeholders 2. Maturing emerging communication technologies, improving ships connectivity 3. Proactive facilitation of standardisation to maximize adoption and impact 4. Showcasing solutions in two very different geographic areas. Web-based initial implementation of the services will be done in the Arctic and the Baltic 5. Ensure an ambitious upgrade of international maritime safety regimes through a strong participation in regulatory bodies including EU and IMO EfficienSea 2 has gathered a unique level of competence in a consortium of 32 partners from 10 countries representing authorities, academia, international organisations as well as equipment manufacturers combining all the right capacities for effectively achieving these ambitious objectives.

Project's Partners List

EfficienSea 2

EfficienSea 2 - Efficient, Safe and Sustainable Traffic at Sea

Project's partners	Name	Country
1	SØFARTSSTYRELSEN	DK
2	GEODATASTYRELSEN	DK
3	DANMARKS METEOROLOGISKE INSTITUT	DK
4	VEETEEDE AMET	EE
5	LIIKENNEVIRASTO	FI
6	URZAD MORSKI W GDYNI	PL
7	INSTYTUT LACZNOSCI - PANSTWOWY INSTYTUT BADAWCZY	PL
8	SWEDISH MARITIME ADMINISTRATION	SE
9	CHALMERS TEKNISKA HOEGSKOLA AB	SE
10	KOBENHAVNS UNIVERSITET	DK
11	DANMARKS TEKNISKE UNIVERSITET	DK
12	LATVIJAS JURAS AKADEMIJA	LV
13	OFFIS EV	DE
14	THE BALTIC AND INTERNATIONAL MARITIME COUNCIL/BIMCO	DK
15	COMITE INTERNATIONAL RADIO MARITIME- (CIRM)	UK
16	ASSOCIATION INTERNATIONALE DE SIGNALISATION MARITIME	FR
17	Europas Maritime Udviklingscenter	DK
18	SSPA SWEDEN AB.	SE
19	FORCE TECHNOLOGY	DK
20	COLLECTE LOCALISATION SATELLITES SA	FR
21	DANELEC ELECTRONICS AS	DK
22	FREQUENTIS AG	AT
23	Furuno Finland Oy	FI
24	GateHouse A/S	DK
25	LITEHAUZ APS	DK
26	LYNGSO MARINE AS	DK
27	MARSEC-XL INTERNATIONAL LTD	MT
28	ROCKETBROTHERS.DK APS	DK
29	THRANE & THRANE AS	DK
30	TRANSAS MARINE INTERNATIONAL AB	SE
31	VISSIM AS	NO
32	UNITED KINGDOM HYDROGRAPHIC OFFICE	UK

HERCULES-2

Fuel flexible, near -zero emissions, adaptive performance marine engine

At a glance

Acronym: HERCULES-2

Title: Fuel flexible, near -zero emissions, adaptive performance marine engine

Call: H2020-MG-2014_TwoStages

Instrument: Innovation action

Start date: 01/05/2015

End date: 30/04/2018

Duration: 36 months

Total Cost: € 25,108,685.18

EC Contribution: € 16,813,399.63

Consortium: 33 partners

Project Coordinator: NATIONAL TECHNICAL UNIVERSITY OF ATHENS – NTUA, EL

Abstract

The project HERCULES-2 is targeting at a fuel-flexible large marine engine, optimally adaptive to its operating environment. The objectives of the HERCULES-2 project are associated to 4 areas of engine integrated R&D: 1) Improving fuel flexibility for seamless switching between different fuel types, including non-conventional fuels. 2) Formulating new materials to support high temperature component applications. 3) Developing adaptive control methodologies to retain performance over the powerplant lifetime. 4) Achieving near-zero emissions, via combined integrated aftertreatment of exhaust gases. The HERCULES-2 is the next phase of the R&D programme HERCULES on large engine technologies, which was initiated in 2004 as a joint vision by the two major European engine manufacturer groups MAN and WARTSILA. Three consecutive projects namely HERCULES - A, -B, -C spanned the years 2004-2014. These three projects produced exceptional results and received worldwide acclaim. The targets of HERCULES-2 build upon and surpass the targets of the previous HERCULES projects, going beyond the limits set by the regulatory authorities. By combining cutting-edge technologies, the Project overall aims at significant fuel consumption and emission reduction targets using integrated solutions, which can quickly mature into commercially available products. Focusing on the applications, the project includes several full-scale prototypes and shipboard demonstrators. The project HERCULES-2 comprises 4 R&D Work Package Groups (WPG): - WPG I: Fuel flexible engine - WPG II: New Materials (Applications in engines) - WPG III: Adaptive Powerplant for Lifetime Performance - WPG IV: Near-Zero Emissions Engine The consortium comprises 32 partners of which 30% are Industrial and 70% are Universities / Research Institutes. The Budget share is 63% Industry and 37% Universities. The HERCULES-2 proposal covers with authority and in full the Work Programme scope B1 of MG.4.1-2014.

Project's Partners List

HERCULES-2

Fuel flexible, near -zero emissions, adaptive performance marine engine

Project's partners	Name	Country
1	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	EL
2	AALTO-KORKEAKOULUSAATIO	FI
3	ABB Turbo Systems AG	CH
4	AVENTICS GMBH	DE
5	BUNDESANSTALT FUER MATERIALFORSCHUNG UND -PRUEFUNG	DE
6	DANMARKS TEKNISKE UNIVERSITET	DK
7	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH
8	FACHHOCHSCHULE NORDWESTSCHWEIZ	CH
9	MAX PLANCK INSTITUT FUR EISENFORSCHUNG GMBH	DE
10	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	DE
11	HOCHSCHULE OFFENBURG	DE
12	JOHNSON MATTHEY PLC	UK
13	KARLSRUHER INSTITUT FUER TECHNOLOGIE	DE
14	KENNAMETAL STELLITE GMBH	DE
15	UNIVERSITA DEL SALENTO	IT
16	GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER	DE
17	O.M.T. - OFFICINE MECCANICHE TORINO SPA	IT
18	LUNDS UNIVERSITET	SE
19	MAN DIESEL & TURBO SE	DE
20	PAUL SCHERRER INSTITUT	CH
21	THE UNIVERSITY OF SHEFFIELD	UK
22	TECHNISCHE UNIVERSITAET MUENCHEN	DE
23	TECHNISCHE UNIVERSITAET WIEN	AT
24	UNIVERSITAET BREMEN	DE
25	LINKOPINGS UNIVERSITET	SE
26	WARTSILA FINLAND OY	FI
27	WAERTSILA NETHERLANDS B.V.	NL
28	WARTSILA IBERICA SA	ES
29	WINTERTHUR GAS & DIESEL AG	CH
30	VAASAN YLIOPISTO	FI
31	Teknologian tutkimuskeskus VTT Oy	FI
32	DINEX ECOCAT OY	FI
33	POLITECNICO DI MILANO	IT

LeanShips

Low Energy And Near to zero emissions Ships

At a glance

Acronym: LeanShips

Title: Low Energy And Near to zero emissions Ships

Call: H2020-MG-2014_TwoStages

Instrument: Innovation action

Start date: 01/05/2015

End date: 30/04/2019

Duration: 48 months

Total Cost: € 22,993,509.38

EC Contribution: € 17,256,399.21

Consortium: 46 partners

Project Coordinator: SCHEEPSWERF DAMEN GORINCHEM BV, NL

Abstract

The specific challenge for waterborne transport call MG4.1 is, "To support developments that make new and existing vessels…more efficient and less polluting". A sound way to support developments is, to demonstrate solutions that are sufficiently close to market so that ship owners will consider these in their future investment plans. Following this reasoning LeanShips will execute 8 demonstration actions that combine technologies for efficient, less polluting new/retrofitted vessels with end users' requirements. Demonstrators were selected for their end-user commitment (high realisation chance), impact on energy use/emissions, EU-relevance, innovativeness and targeted-TRL at the project end. Selected technologies (TRL3-4 and higher) address engines/fuels/drive trains, hull/propulsors, energy systems/emission abatement technologies. Technologies are demonstrated mostly at full-scale and evidence is provided on energy and emission performance in operational environments. The LeanShips partnership contains ship owners, shipyards and equipment suppliers, in total 48 partners from industry (81%) and other organisations. Industry has a leading role in each demonstrator. Target markets are the smaller-midsized ships for intra-European waterborne transport, vessels for offshore operations and the leisure/cruise market. First impact estimates show fuel saving of up to 25 %, CO2 at least up to 25%, and SOx/NOx/PM 10-100%. These estimates will be updated during the project. First market potential estimates for the LeanShips partnership and for markets beyond the partnership are promising. Project activities are structured into 3 layers: Basis layer with 8 focused demonstrators (WP 04-11), Integration layer with QA, Innovation Platform and Guide to Innovation (WP02), Dissemination and Market-uptake (WP03), and top Management layer (WP01), in total 11 Work Packages. The demonstrators represent an industry investment of ca. M€ 57, the required funding is M€ 17, 25.

Project's Partners List

LeanShips

Low Energy And Near to zero emissions Ships

Project's partners	Name	Country
1	SCHEEPSWERF DAMEN GORINCHEM BV	NL
2	STICHTING NETHERLANDS MARITIME TECHNOLOGY FOUNDATION	NL
3	CENTER OF MARITIME TECHNOLOGIES EV	DE
4	STX FRANCE SA	FR
5	SIREHNA - SOCIETE D'INGENIERIE, DE RECHERCHES ET D'ETUDES EN HYDRODYNAMIQUE NAVALE SA	FR
6	FINCANTIERI SPA	IT
7	STICHTING MARITIEM RESEARCH INSTITUUT NEDERLAND	NL
8	UNIVERSITEIT GENT	BE
9	CETENA S.p.A. Centro per gli Studi di Tecnica Navale	IT
10	RINA SERVICES SPA	IT
11	MEC Insenerilahendused	EE
12	SMARTLINK OU	EE
13	TALLINK GRUPP AS	EE
14	ENERTIME	FR
15	LEROUX ET LOTZ TECHNOLOGIES	FR
16	HUG ENGINEERING ITALIA SRL	IT
17	HOCHSCHULE EMDEN/LEER	DE
18	PAULSTRA	FR
19	MTU Friedrichshafen GmbH	DE
20	SVITZER A/S	DK
21	NAVANTIA S.A.	ES
22	ROLLS-ROYCE POWER ENGINEERING PLC	UK
23	ROLLS-ROYCE MARINE AS	NO
24	Rolls-Royce AB	SE
25	LLOYD'S REGISTER EMEA IPS	UK
26	WAGENBORG SHIPPING BV	NL
27	CONOSHIP INTERNATIONAL BV	NL
28	CHALMERS TEKNISKA HOEGSKOLA AB	SE
29	OSCILLATING FOIL DEVELOPMENT BV	NL
30	DCP DUTCH CARGO PURCHASE BV	NL
31	VICUS DESARROLLOS TECNOLOGICOS SL	ES
32	METHANEX EUROPE SA	BE
33	ABEKING & RASMUSSEN SCHIFFS- UND YACHTWERFT AKTIENGESELLSCHAFT	DE

Project's Partners List

LeanShips

Low Energy And Near to zero emissions Ships

Project's partners	Name	Country
34	KANT MARINE EN INDUSTRIE NV	BE
35	DREDGING INTERNATIONAL NV	BE
36	MACHINEFABRIEK BOLIER BV	NL
37	CRYONORM SYSTEMS BV	NL
38	NIESTERN-SANDER REPARATIE BV	NL
39	COFELY NEDERLAND NV	NL
41	KONGSBERG MARITIME AS	NO
42	SANTIERUL NAVAL DAMEN GALATI SA	RO
43	MARINE ENGINEERING SRL	RO
44	WARTSILA FINLAND OY	FI
45	WAERTSILA NETHERLANDS B.V.	NL
46	SHIPS AND MARITIME EQUIPMENT ASSOCIATION OF EUROPE ASBL	BE

LYNCEUS2MARKET

An innovative people localisation system for safe evacuation of large passenger ships

At a glance

Acronym: LYNCEUS2MARKET

Title: An innovative people localisation system for safe evacuation of large passenger ships

Call: H2020-MG-2014_TwoStages

Instrument: Innovation action

Start date: 01/06/2015

End date: 31/05/2018

Duration: 36 months

Total Cost: € 10,155,002.50

EC Contribution: € 7,260,975.00

Consortium: 16 partners

Project Coordinator: RTD TALOS LIMITED, CY

Abstract

Maritime disasters in recent years are a stark reminder of the imperative need for timely and effective evacuation of large passenger ships during emergency. The Lynceus2Market project addresses this challenge through delivering a revolutionary operational system for safe evacuation based on innovative people localisation technologies. The system consists of: 1) Localisable life jackets that can provide passenger location in real-time during emergency 2) Smart smoke detectors that also act as base stations of an on-board localisation system 3) Innovative localisable bracelets able to send activity data to the emergency management team 4) Low cost fire and flooding escalation monitoring sensor notes 5) novel mustering handheld devices for automatic identification and counting of passengers during evacuation 6) Smart localisable cabin key cards 7) Intelligent decision support software able to fuse all localisation, activity and disaster escalation data to provide an integrated real-time visualisation, passenger counting and evacuation decision support 8) Innovative shore or ship-launched Unmanned Aerial Vehicle for localising people in the sea in short time and assisting search and rescue operations when accident occurs in extreme weather, during the night or in a remote location 9) Low-cost rescue-boat mounted radars for people localisation in the vicinity of the boat. The proposed project is based on the promising results developed in the FP7 LYNCEUS project where the innovative technologies were tested in lab and in small scale pilots. Lynceus2Market brings together European global players in the field, such as cruise ship owners, operators, ship builders, maritime equipment manufacturers, a classification society, industry associations and important technology organisations with the aim to implement the first market replication of these technologies and products. The Lynceus2Market will create significant impact by saving passenger lives during maritime accidents.

European Commission

Project's Partners List

LYNCEUS2MARKET

An innovative people localisation system for safe evacuation of large passenger ships

Project's partners	Name	Country
1	RTD TALOS LIMITED	CY
2	LLOYD'S REGISTER EMEA IPS	UK
3	RCL CRUISES LTD	UK
4	AUTRONICA FIRE AND SECURITY AS	NO
5	CELESTYAL SHIP MANAGEMENT LIMITED	CY
6	SIGNALGENERIX LTD	CY
7	FORO MARITIMO VASCO	ES
8	MARITIME INSTITUTE OF EASTERN MEDITERRANEAN - MAR.IN.E.M.	CY
9	ASOCIACION DE EMPRESARIOS TEXTILES DE LA REGION VALENCIANA	ES
10	TECHNISCHE UNIVERSITAET DRESDEN	DE
11	SAFE MARINE SRL	IT
12	CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT	CH
13	G.G. DEDALOS TECHNOLOGY SERVICES LTD	CY
14	I. PANARETOU - CHAR. KOSTOPOULOS OE	EL
15	CANEPA & CAMPI SRL	IT
16	MINISTRY OF TRANSPORT, COMMUNICATIONS AND WORKS	CY

Prominent

Promoting Innovation in the Inland Waterways Transport Sector

At a glance

Acronym: Prominent

Title: Promoting Innovation in the Inland Waterways Transport Sector

Call: H2020-MG-2014_TwoStages

Instrument: Research and Innovation Action

Start date: 01/05/2015

End date: 30/04/2018

Duration: 36 months

Total Cost: € 6,572,616.25

EC Contribution: € 6,572,616.25

Consortium: 17 partners

Project Coordinator: STICHTING STC-GROUP, NL

Abstract

This proposal is for the creation of a Research and Innovation Action aimed at advancing innovation in the Inland Waterway Transport (IWT) sector (topic MG.4.4-2014). It is called "PROMINENT – Promoting Innovation in the Inland Waterways Transport Sector" and will address the key needs for technological development, as well as the barriers to innovation and greening in the European inland navigation sector. PROMINENT thereby is fully in line with the objectives of the European action programme NAIADES-II. PROMINENT addresses all topics included in call MG.4.4-2014 and is geared towards reaching its full impacts during the project lifetime. PROMINENT is ultimately aimed at providing solutions which make inland navigation as competitive as road transport in terms of air pollutant emissions by 2020 and beyond. In parallel PROMINENT aims to further decrease the energy consumption and carbon footprint of IWT, an area where IWT has already a strong advantage compared to road transport. PROMINENT will focus on: 1) Massive transition towards efficient and clean vessels; 2) Certification and monitoring of emission performance and development of innovative regimes; 3) Harmonisation and modernisation of professional qualifications and the stimulation of the further integration of IWT into sustainable transport chains. PROMINENT will achieve the following targets: - develop cost-effective solutions applicable to 70% of the fleet and reduce the implementation costs by 30%; - involve all relevant stakeholders; - actively address and remove implementation barriers by 2020. The PROMINENT partners have found broad support among political and commercial decision makers in the field of inland navigation. Through its direct access to relevant industrial stakeholders and Member States the consortium has obtained significant backup needed to perform the work. The commitment of these organisations will lead to a high acceptance and further dissemination of results.

Project's Partners List

Prominent

Promoting Innovation in the Inland Waterways Transport Sector

Project's partners	Name	Country
1	STICHTING STC-GROUP	NL
2	Via donau – Österreichische Wasserstraßen-Gesellschaft mbH	AT
3	STICHTING PROJECTEN BINNENVAART	NL
4	PRO DANUDE MANAGEMENT GMBH	AT
5	ECORYS NEDERLAND B.V.	NL
6	TUV NORD MOBILITAT GMBH & CO KG	DE
7	ENTWICKLUNGSZENTRUM FUR SCHIFFSTECH NIK UND TRANSPORTSYSTEME EV	DE
8	UNIVERSITATEA DIN CRAIOVA	RO
9	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
10	FH OO FORSCHUNGS & ENTWICKLUNGS GMBH	AT
11	PANTEIA BV	NL
12	COMPANIA DE NAVIGATIE FLUVIALA ROMANA NAVROM SA	RO
13	ADS PROPULSION BV	NL
14	WAERTSILA NETHERLANDS B.V.	NL
15	SGS NEDERLAND BV	NL
16	MULTRONIC NV	BE
17	BUNDESANSTALT FUR WASSERBAU	DE

2014

Societal Challenge 5: Climate Action, Environment, Resource Efficiency and Raw Materials

Call – Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials

At a glance

Acronym: AQUACROSS

Title: Knowledge, Assessment, and Management for AQUAtic Biodiversity and Ecosystem Services aCROSS EU policies (AQUACROSS)

Call: H2020-SC5-2014-two-stage

Instrument: Research and Innovation Action

Start date: 01/06/2015

End date: 30/11/2018

Duration: 42 months

Total Cost: € 6,913,116.25

EC Contribution: € 6,343,613.75

Consortium: 16 partners

Project Coordinator: ECOLOGIC INSTITUT gemeinnützige GmbH, DE

AQUACROSS

Knowledge, Assessment, and Management for AQUAtic Biodiversity and Ecosystem Services aCROSS EU policies (AQUACROSS)

Abstract

AQUACROSS aims to support EU efforts to enhance the resilience and stop the loss of biodiversity of aquatic ecosystems as well as to ensure the ongoing and future provision of aquatic ecosystem services. It focuses on advancing the knowledge base and application of the ecosystem-based management concept for aquatic ecosystems by developing cost effective measures and integrated management practices. AQUACROSS considers the EU policy framework (i.e. goals, concepts, time frames) for aquatic ecosystems and builds on knowledge stemming from different sources (i.e. WISE, BISE, Member State reporting, modelling) to develop innovative management tools, concepts, and business models (i.e. indicators, maps, ecosystem assessments, participatory approaches, mechanisms for promoting the delivery of ecosystem services) for aquatic ecosystems at various scales. It thereby provides an unprecedented effort to unify policy concepts, knowledge, and management concepts of freshwater, coastal, and marine ecosystems to support the cost-effective achievement of the targets set out by the EU 2020 Biodiversity Strategy.

Project's Partners List

AQUACROSS

Knowledge, Assessment, and Management for AQUAtic Biodiversity and Ecosystem Services aCROSS EU policies (AQUACROSS)

Project's partners	Name	Country
1	ECOLOGIC INSTITUT gemeinnützige GmbH	DE
2	FORSCHUNGSVERBUND BERLIN E.V.	DE
3	UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION -UNESCO	FR
4	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	NL
5	FUNDACION IMDEA AGUA	ES
6	UNIVERSITAET FUER BODENKULTUR WIEN	AT
7	UNIVERSIDADE DE AVEIRO	PT
8	ACTEON SARL	FR
9	THE UNIVERSITY OF LIVERPOOL	UK
10	INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE	BE
11	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
12	STOCKHOLMS UNIVERSITET	SE
13	INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE DELTA DUNARII	RO
14	EIDGENOESSISCHE ANSTALT FUER WASSERVERSORGUNG ABWASSERREINIGUNG UND GEWAESSERSCHUTZ	CH
15	UICN, BUREAU DE REPRESENTATION AUPRES DE L'UNION EUROPEENNE AISBL	BE
16	BC3 BASQUE CENTRE FOR CLIMATE CHANGE - KLIMA ALDAKETA IKERGAI	ES

ECOPOTENTIAL

ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS

At a glance

Acronym: ECOPOTENTIAL

Title: ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS

Call: H2020-SC5-2014-two-stage

Instrument: Research and Innovation Action

Start date: 01/06/2015

End date: 31/05/2019

Duration: 48 months

Total Cost: € 15,993,931.25

EC Contribution: € 14,874,340.00

Consortium: 47 partners

Project Coordinator: CONSIGLIO NAZIONALE DELLE RICERCHE, IT

Abstract

Terrestrial and marine ecosystems provide essential services to human societies. Anthropogenic pressures, however, cause serious threat to ecosystems, leading to habitat degradation, increased risk of collapse and loss of ecosystem services. Knowledge-based conservation, management and restoration policies are needed to improve ecosystem benefits in face of increasing pressures. ECOPOTENTIAL makes significant progress beyond the state-of-the-art and creates a unified framework for ecosystem studies and management of protected areas (PA). ECOPOTENTIAL focuses on internationally recognized PAs in Europe and beyond in a wide range of biogeographic regions, and it includes UNESCO, Natura2000 and LTER sites and Large Marine Ecosystems. Best use of Earth Observation (EO) and monitoring data is enabled by new EO open-access ecosystem data services (ECOPERNICUS). Modelling approaches including information from EO data are devised, ecosystem services in current and future conditions are assessed and the requirements of future protected areas are defined. Conceptual approaches based on Essential Variables, Macrosystem Ecology and cross-scale interactions allow for a deeper understanding of the Earth's Critical Zone. Open and interoperable access to data and knowledge is assured by a GEO Ecosystem Virtual Laboratory Platform, fully integrated in GEOSS. Support to transparent and knowledge-based conservation and management policies, able to include information from EO data, is developed. Knowledge gained in the PAs is upscaled to pan-European conditions and used for planning and management of future PAs. A permanent stakeholder consultancy group (GEO Ecosystem Community of Practice) will be created. Capacity building is pursued at all levels. SMEs are involved to create expertise leading to new job opportunities, ensuring long-term continuation of services. In summary, ECOPOTENTIAL uses the most advanced technologies to improve future ecosystem benefits for humankind.

Project's Partners List

ECOPOTENTIAL

ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS

Project's partners	Name	Country
1	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
2	UNIVERSITA DEL SALENTO	IT
3	ACCADEMIA EUROPEA PER LA RICERCA APPLICATA ED IL PERFEZIONAMENTO PROFESSIONALE BOLZANO (ACCADEMIA EUROPEA BOLZANO)	IT
4	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
5	HELMHOLTZ-ZENTRUM FUER UMWELTFORSCHUNG GMBH - UFZ	DE
6	KARLSRUHER INSTITUT FUER TECHNOLOGIE	DE
7	UNIVERSITAET BAYREUTH	DE
8	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DE
9	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
10	UNIVERSITY OF LEEDS	UK
11	ENVIRONMENT SYSTEMS LIMITED	UK
12	UNIVERSITATEA DIN BUCURESTI	RO
13	ICETA INSTITUTO DE CIENCIAS, TECNOLOGIAS E AGROAMBIENTE DA UNIVERSIDADE DO PORTO	PT
14	INSTITUTO SUPERIOR TECNICO	PT
15	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	EL
16	FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	EL
17	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	CH
18	BEN-GURION UNIVERSITY OF THE NEGEV	IL
19	ISRAEL NATURE AND NATIONAL PARKS PROTECTION AUTHORITY	IL
20	PSI HYDROBIOLOGICAL INSTITUTE OHRID	MK
21	COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH	ZA
22	Istituto Superiore per la Protezione e la Ricerca Ambientale	IT
23	POLITECNICO DI MILANO	IT
24	CENTRO DE INVESTIGACION ECOLOGICA YAPLICACIONES FORESTALES	ES
25	UNIVERSITAT AUTONOMA DE BARCELONA	ES
26	UNIVERSIDAD DE GRANADA	ES
27	UMWELTBUNDESAMT GMBH	AT
28	UNIVERSITAET POTSDAM	DE
29	MUSEUM FUR NATURKUNDE - LEIBNIZ-INSTITUT FUR EVOLUTIONS- UND BIODIVERSITATSFORSCHUNG AN DER HUMBOLDT-UNIVERSITAT ZU BERLIN	DE
30	FONDATION TOUR DU VALAT	FR
31	STICHTING DELTARES	NL
32	ARATOS ANONYMOS ETERIA ANAPTYXIS, PARAGOGIS & EMPORIAS PROIONTON PLIROFORIKIS & IPSILIS TECHNOLOGIAS (Aratos Technologies S.A.)	EL
33	STARLAB BARCELONA SL	ES
34	MARTIN-LUTHER-UNIVERSITAET HALLE-WITTENBERG	DE

Project's Partners List

ECOPOTENTIAL

ECOPOTENTIAL: IMPROVING FUTURE ECOSYSTEM BENEFITS THROUGH EARTH OBSERVATIONS

Project's partners	Name	Country
35	STICHTING NIOZ, KONINKLIJK NEDERLANDS INSTITUUT VOOR ONDERZOEK DER ZEE	NL
36	KLAIPEDOS UNIVERSITETAS	LT
37	UNIVERSITE PAUL SABATIER TOULOUSE III	FR
38	UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO	FR
39	LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE	UK
40	UNIVERSITETET I BERGEN	NO
41	TERRADUE UK LTD	UK
42	UNITED NATIONS ENVIRONMENT PROGRAMME	KE
43	UNIVERSITY OF NEW SOUTH WALES	AU
44	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH
45	AGENCIA DE MEDIO AMBIENTE Y AGUA DE ANDALUCIA	ES
46	UNIVERSITE DE BRETAGNE OCCIDENTALE	FR
47	UNIVERSITE DE GENEVE	CH

At a glance

Acronym: ¡VAMOS!

Title: ¡Viable and Alternative Mine Operating System!

Call: H2020-SC5-2014-one-stage

Instrument: Research and Innovation action

Start date: 01/02/2015

End date: 31/07/2018

Duration: 42 months

Total Cost: € 9,200,000.00

EC Contribution: € 9,200,000.00

Consortium: 18 partners

Project Coordinator: BMT GROUP LTD, UK

¡VAMOS!

¡Viable and Alternative Mine Operating System!

Abstract

Estimates indicate that the value of unexploited European mineral resources at a depth of 500-1,000 metres is ca €100 billion, however, a number of physical, economic, social, environmental and human constraints have as yet limited their exploitation. ¡VAMOS! will provide a new Safe, Clean and Low Visibility Mining Technique and will prove its Economic Viability for extracting currently unreachable mineral deposits, thus encouraging investment and helping to put the EU back on a level playing field in terms of access to strategically important minerals. Deriving from successful deep-sea mining techniques, the ¡VAMOS! mining solution aspires to lead to: Re-opening abandoned mines; Extensions of opencut mines which are limited by stripping ratio, hydrological or geotechnical problems; and opening of new mines in the EU. ¡VAMOS! will design and manufacture innovative automated excavation equipment and environmental impact monitoring tools that will be used to perform field tests in four mine sites across Europe with a range of rock hardness and pit morphology. VAMOS will: 1.Develop a prototype underwater, remotely controlled, mining machine with associated launch and recovery equipment 2.Enhance currently available underwater sensing, spatial awareness, navigational and positioning technology 3.Provide an integrated solution for efficient Real-time Monitoring of Environmental Impact 4.Conduct field trials with the prototype equipment in abandoned and inactive mine sites with a range of rock types and at a range of submerged depths 5.Evaluate the productivity and cost of operation to enable mine-ability and economic reassessment of the EU's mineral resources. 6. Maximize impact and enable the Market Up-Take of the proposed solutions by defining and overcoming the practicalities of the concept, proving the operational feasibility and the economic viability. 7. Contribute to the social acceptance of the new extraction technique via public demonstrations in EU regions.

Project's Partners List

¡VAMOS!
¡Viable and Alternative Mine Operating System!

Project's partners	Name	Country
1	BMT GROUP LTD	UK
2	SOIL MACHINE DYNAMICS LIMITED	UK
3	DAMEN DREDGING EQUIPMENT BV	NL
4	INESC TEC - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, TECNOLOGIA E CIENCIA	PT
5	FUGRO EMU LIMITED	UK
6	Zentrum fuer Telematik e.V.	DE
7	MONTANUNIVERSITAT LEOBEN	AT
8	MINERALIA-MINAS, GEOTECNIA E CONSTRUCOES LDA	PT
9	MARINE MINERALS LIMITED	UK
10	EMPRESA DE DESENVOLVIMENTO MINEIRO	PT
11	SANDVIK MINING AND CONSTRUCTION GMBH	AT
12	GEOLOSKI ZAVOD SLOVENIJE	SI
13	LA PALMA RESEARCH CENTRE FOR FUTURE STUDIES SL	ES
14	FEDERATION EUROPEENNE DES GEOLOGUES	FR
15	TRELLEBORG EDE B.V.	NL
16	FEDERALNI ZAVOD ZA GEOLOGIJU SARAJEVO	BA
17	FONDACIJA ZA OBNOVU I RAZVOJ REGIJE VARES	BA
18	TRELLEBORG RIDDERKERK BV	NL

2014

Societal Challenge 5: Climate Action, Environment, Resource Efficiency and Raw Materials

Call – Water Innovation: Boosting its value for Europe

At a glance

Acronym: CYTO-WATER

Title: Integrated and portable image cytometer for rapid response to Legionella and Escherichia coli in industrial and environmental waters

Call: H2020-WATER-2014-two-stage

Instrument: Innovation action

Start date: 01/06/2015

End date: 31/05/2018

Duration: 36 months

Total Cost: € 2,368,298.75

EC Contribution: € 1,896,624.50

Consortium: 6

Project Coordinator: LABAQUA SA, ES

CYTO-WATER

Integrated and portable image cytometer for rapid response to Legionella and Escherichia coli in industrial and environmental waters

Abstract

The proposed project will deploy for the first time a new imaging cytometer platform capable of detecting minute quantity of micro-organisms in industrial and environmental waters. The platform is based on the integration of proprietary technologies available to the consortium partners: an automatic water concentration cartridge combined with a microfluidic cell will provide an adequate sample to a newly designed fluorescence image cytometer whose readings will be recorded and processed using a proper software interface. It will be validated for quantifying Legionella and Escherichia coli (E. coli) population within 120 minutes from obtaining the sample, overcoming in this way the main disadvantage of traditional methods used in laboratories, i.e. long time-to results which can currently last up to 12 days in the case of Legionella and 1 day for E. coli. The targeted detection limit will be 10-100 cells/L and 5-20 cells/100 mL for Legionella and E.coli, respectively. Also, the new imaging cytometer will have a portable form, a size similar to a smart-phone, which will increase its versatility and widen the possibilities of onsite applications. The relevance of the project is clear when one thinks about the high risk of legionellosis in some specific industrial environments, such as cooling waters, evaporative condensers and air conditioning systems and the fact that E. coli is one of the faecal pollution index commonly analyzed for monitoring the presence of waterborne pathogens and hence the quality of bathing waters. From a market perspective, more than 7 million of Legionella analyses are performed annually in Europe while E. coli level is included in all bathing water regulations in different EU countries. CYTO-WATER clearly falls into HORIZON 2020 topic WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication and addresses Water Framework Directive (2000/60/EC) and in the Bathing Water Directive (2006/7/EC).

Project's Partners List

CYTO-WATER

Integrated and portable image cytometer for rapid response to Legionella and Escherichia coli in industrial and environmental waters

Project's partners	Name	Country
1	LABAQUA SA	ES
2	MEM-TEQ VENTURES LIMITED	UK
3	MICROTEC GESELLSCHAFT FUR MIKROTECHNOLOGIE MBH	DE
4	BERTIN TECHNOLOGIES SAS	FR
5	CETAQUA, CENTRO TECNOLOGICO DEL AGUA, FUNDACION PRIVADA	ES
6	FUNDACIO INSTITUT DE CIENCIES FOTONIQUES	ES

SUBSOL

Bringing coastal SUBsurface water SOLutions to the market

At a glance

Acronym: SUBSOL

Title: Bringing coastal SUBsurface water SOLutions to the market

Call: H2020-WATER-2014-two-stage

Instrument: Innovation Action

Start date: 01/09/2015

End date: 31/08/2018

Duration: 36 months

Total Cost: € 4,170,008.38

EC Contribution: € 3,460,565.24

Consortium: 15 partners

Project Coordinator: KWR WATER B.V., NL

Abstract

Coastal areas are the most productive and economically dominant regions of the world. The high water demand in these regions, however, puts tremendous pressure on their freshwater resources and ecosystems. This leads to problems like seasonal water shortage, saltwater intrusion, and disappearance of wetlands. Building on national, regional and European research and innovation programs, in the past five years, a set of innovative, practical concepts have been developed for protection, enlargement and utilization of freshwater resources in coastal areas. These subsurface water solutions (SWS) combine innovations in water well design and configuration, allowing for advanced groundwater management, and maximum control over freshwater resources. SWS have been successfully piloted by public-private partnerships. These full-scale pilots have demonstrated SWS capacity to support sustainable freshwater supply in coastal areas, energy reduction, food production, and financial savings. SUBSOL targets a market breakthrough of SWS as robust answers to freshwater resources challenges in coastal areas, by demonstration, market replication, standardization and commercialisation. The route to market includes business cases, market scans and capacity building in selected regions in Europe (Mediterranean, Northwestern Europe) and worldwide (USA, Brazil, China, Vietnam). SUBSOL will share experiences and outcomes with stakeholder groups through an online platform that will be linked to existing networks, including EIP on Water. The SUBSOL consortium combines knowledge providers, technology SMEs, consultants, and end-users from across Europe. Our ambition is to introduce a new way of thinking in terms of water resources management, promoting the sustainable development of coastal areas worldwide. This will stimulate economic growth and will create market opportunities and jobs for the European industry and SMEs.

Project's Partners List

SUBSOL

Bringing coastal SUBsurface water SOLutions to the market

Project's partners	Name	Country
1	KWR WATER B.V.	NL
2	ADELPHI RESEARCH GGMBH	DE
3	ALPHAFILM & KOMMUNIKATION APS	DK
4	ARCADIS NEDERLAND BV	NL
5	B-E DE LIER BV	NL
6	BUNDESANSTALT FUER GEOWISSENSCHAFTEN UND ROHSTOFFE	DE
7	ROBOTEK GRUPPEN AS	DK
8	FONDEN TEKNOLOGIRADET	DK
9	ETAIRIA GEOGOLOGIKON-GEOFYSIKON EREVNON KL. DIMITRIADIS KAI SIA EE	EL
10	Geological Survey of Denmark and Greenland	DK
11	GREENER THAN GREEN TECHNOLOGIES AE	EL
12	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	EL
13	ORBICON AS	DK
14	GIOUMPITEK MELETI SCHEDIASMOS YLOPOIISI KAI POLISI ERGON PLIROFORIKIS ETAIREIA PERIORISMENIS EFTHYNIS	EL
15	VITENS NV	NL


European
Commission

2014

Excellent Science: EUROPEAN RESEARCH COUNCIL (ERC)

Call - ERC Proof of Concept Grant

SmartTap

Real-Time Monitoring System for Water Quality

At a glance

Acronym: SmartTap

Title: Real-Time Monitoring System for Water Quality

Call: ERC-2014-PoC

Instrument: ERC-POC - Proof of Concept Grant

Start date: 01/01/2015

End date: 30/06/2016

Duration: 18 months

Total Cost: € 150,000.00

EC Contribution: € 150,000.00

Consortium: 2 partners

Project Coordinator: UNIVERSITY OF CYPRUS, CY

Partner: AQUALLIGENCE LIMITED, CY

Abstract

Clean drinking water is a critical resource, important for the health and well-being of all humans. Uninterrupted supply of clean drinking water is considered a human right, thus water utilities must monitor and control the water quality following strict European and national regulations. A water contamination event can have a dramatic effect on everyday life, as well as on the local economy. Unfortunately, due to the large-scale and complex nature of water distribution systems, water quality monitoring is sporadic, while contamination events may take days before they are detected. The situation is especially severe in developing countries, where water contamination problems commonly result in hospitalizations, or even deaths, and have a major impact on the quality of life. The idea of the proposed proof of concept is to develop the SmartTap system, an intelligent water quality monitoring system that uses spatial and temporal data processing techniques for monitoring the quality of water and detecting any contamination events. The SmartTap is a cyber-physical system comprised of low-cost wireless sensory devices (physical) and smart software (cyber) that are seamlessly integrated so that the software is able to compensate for any inaccuracies in the hardware. The system is suitable for large or small scale deployments, enabling a sensor network approach for providing effective water quality monitoring to consumers (homes, schools, hospitals, hotels, etc.) and water utilities. The goal is to provide real-time water quality monitoring information to consumers and utilities and to reliably detect any contamination events within 1-2 hours, compared to the current state of several days.

2014

Excellent Science:
MARIE-SKŁKODOWSKA-CURIE ACTIONS

Call Marie-Skłodowska-Curie fellowships

At a glance

Acronym: FreshwaterMPs

Title: The environmental fate and effects of microplastics in freshwater ecosystems

Call: H2020-MSCA-IF-2014

Instrument: MSCA-IF-EF-ST - Standard EF

Start date: 01/04/2015

End date: 31/03/2017

Duration: 24 months

Total Cost: € 159,460.80

EC Contribution: € 159,460.80

Project Beneficiary: JOHANN WOLFGANG GOETHE UNIVERSITAET FRANKFURT AM MAIN, DE

FreshwaterMPs

The environmental fate and effects of microplastics in freshwater ecosystems

Abstract

EU member states are currently working towards the realisation of environmental goals specified in the Water Framework Directive (WFD), which aims to protect both human and ecosystem health. Microplastic particles (MPs) are emerging pollutants of increasing concern and are formed primarily when plastic waste degrades in the environment. The impacts of MPs on freshwater biota are not known, however, they may present a potentially persistent and ecotoxicological pollution problem. Accordingly, the goal of this project is to assess the environmental risk of MPs in freshwater habitats. To achieve this, a detailed investigation of MP environmental persistence will be carried out. This will provide environmental fate summaries for different polymer classes and enable the modelling of their degradation processes. This will be combined with laboratory studies to assess relevant sub-lethal endpoints such as reproduction, fitness, inflammation, and oxidative stress. As MPs are known to accumulate co-occurring organic pollutants, the toxicity of virgin MPs will be compared to MPs conditioned with relevant freshwater pollutants. This work will build towards a sophisticated state-of-the-art mesocosm study that will evaluate both MP fate and impacts in model ecosystems. The establishment of a novel framework for the environmental risk assessment of MPs will inform our ability to achieve conservation objectives taking into account MPs as emerging pollutants. The merit of this is that protection goals may be better accommodated in policy and management through the generation of so far unavailable data on MP persistence and environmental toxicity. Taken together, the project will generate so far unavailable data sets to assess for the first time the environmental impacts of freshwater MPs. Thus, the outcomes will highly relevant for academia, politics, stakeholders and society.

2014

Excellent Science: European Research Infrastructures

Call - Developing new world-class research infrastructures

EMBRIC

European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy

At a glance

Acronym: EMBRIC

Title: Atlantic European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy

Call: H2020-INFRADEV-1-2014-1

Instrument: Research and Innovation action

Start date: 01/06/2015

End date: 31/05/2019

Duration: 48 months

Total Cost: € 9,041,611.00

EC Contribution: € 9,041,611.00

Consortium: 27 partners

Project Coordinator: UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6, FR

Abstract

Marine (blue) biotechnology is the key to unlocking the huge economic potential of the unique biodiversity of marine organisms. This potential remains largely underexploited due to lack of connectivity between research services, practical and cultural difficulties in connecting science with industry, and high fragmentation of regional research, development and innovation (RDI) policies. To overcome these barriers, EMBRIC (European Marine Biological Resource Infrastructure Cluster) will link biological and social science research infrastructures (EMBRC, MIRRI, EU-OPENSCREEN, ELIXIR, AQUAEXCEL, RISIS) and will build inter-connectivity along three dimensions: science, industry and regions. The objectives of EMBRIC are to: (1) develop integrated workflows of high quality services for access to biological, analytical and data resources, and deploy common underpinning technologies and practices; (2) strengthen the connection of science with industry by engaging companies and by federating technology transfer (TT) services; (3) defragment RDI policies and involve maritime regions with the construction of EMBRIC. Acceleration of the pace of scientific discovery and innovation from marine bioresources will be achieved through: (i) establishment of multidisciplinary service-oriented technological workflows; (ii) joint development activities focusing on bioprospection for novel marine natural products, and marker-assisted selection in aquaculture; (iii) training and knowledge transfer; (iv) pilot transnational access to cluster facilities and services. EMBRIC will also connect TT officers from contrasted maritime regions to promote greater cohesion in TT practices. It will engage with policy-makers with the aim of consolidating a perennial pan-European virtual infrastructure cluster rooted in the maritime regions of Europe and underpinning the blue bioeconomy.

Project's Partners List

EMBRIC

European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy

Project's partners	Name	Country
1	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6	FR
2	CENTRO DE CIENCIAS DO MAR DO ALGARVE	PT
3	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
4	THE SCOTTISH ASSOCIATION FOR MARINESCIENCE LBG	UK
5	STAZIONE ZOOLOGICA ANTON DOHRN	IT
6	MARINE SCOTLAND	UK
7	MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM	UK
8	FORSCHUNGSVERBUND BERLIN E.V.	DE
9	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
10	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK
11	TUNATECH GMBH	DE
12	XELECT LIMITED	UK
13	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	FR
14	UNIVERSITETET I TROMSOE	NO
15	CAB INTERNATIONAL	UK
16	UNIVERSITEIT GENT	BE
17	INSTITUT PASTEUR	FR
18	HELMHOLTZ-ZENTRUM FUER INFEKTIONSFORSCHUNG GMBH	DE
19	EUROPEAN MOLECULAR BIOLOGY LABORATORY	DE
20	UNIVERSITE DE MARNE LA VALLEE	FR
21	TEL AVIV UNIVERSITY	IL
22	UNIVERSITE DE NICE SOPHIA ANTIPOLIS	FR
23	SCALPRO AS	NO
24	LEIBNIZ-INSTITUT DSMZ-DEUTSCHE SAMMLUNG VON MIKROORGANISMEN UND ZELLKULTUREN GMBH*	DE
25	HELLENIC CENTRE FOR MARINE RESEARCH	EL
26	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
27	UNIVERSITETET I BERGEN	NO

ENVRI PLUS

Environmental Research Infrastructures Providing Shared Solutions for Science and Society

At a glance

Acronym: ENVRI PLUS

Title: Environmental Research Infrastructures Providing Shared Solutions for Science and Society

Call: H2020-INFRADEV-1-2014-1

Instrument: Research and Innovation action

Start date: 01/05/2015

End date: 30/04/2019

Duration: 48 months

Total Cost: € 14,998,034.25

EC Contribution: € 14,683,534.25

Consortium: 37 partners

Project Coordinator: HELSINGIN YLIOPISTO, FI

Abstract

ENVRIPLUS is a cluster of research infrastructures (RIs) for Environmental and Earth System sciences, built around ESFRI roadmap and associating leading e-infrastructures and Integrating Activities together with technical specialist partners. ENVRIPLUS is driven by 3 overarching goals: 1) favoring cross-fertilization between infrastructures, 2) implementing innovative concepts and devices across RIs, and 3) facilitating research and innovation in the field of environment to an increasing number of users outside the RIs. ENVRIPLUS organizes its activities along a main strategic plan where sharing multi-disciplinary expertise will be most effective. It aims to improve Earth observation monitoring systems and strategies, including actions towards harmonization and innovation, to generate common solutions to many shared information technology and data related challenges, to harmonize policies for access and provide strategies for knowledge transfer amongst RIs. ENVRIPLUS develops guidelines to enhance trans-disciplinary use of data and data-products supported by applied use-cases involving RIs from different domains. ENVRIPLUS coordinates actions to improve communication and cooperation, addressing Environmental RIs at all levels, from management to end-users, implementing RI-staff exchange programs, generating material for RI personnel, and proposing common strategic developments and actions for enhancing services to users and evaluating the socio-economic impacts. ENVRIPLUS is expected to facilitate structuration and improve quality of services offered both within single RIs and at pan-RI level. It promotes efficient and multi-disciplinary research offering new opportunities to users, new tools to RI managers and new communication strategies for environmental RI communities. The produced solutions, services and other project results are made available to all environmental RI initiatives, thus contributing to the development of a consistent European RI ecosystem.

Project's Partners List

ENVRI PLUS

Environmental Research Infrastructures Providing Shared Solutions for Science and Society

Project's partners	Name	Country
1	HELSINGIN YLIOPISTO	FI
2	EURO-ARGO ERIC	FR
3	EISCAT SCIENTIFIC ASSOCIATION	SE
4	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
5	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
6	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
7	FORSCHUNGSZENTRUM JULICH GMBH	DE
8	ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA	IT
9	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
10	Euro-Mediterranean Seismological Centre	FR
11	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH
12	UNIVERSITAET BREMEN	DE
13	UNIVERSITEIT VAN AMSTERDAM	NL
14	UNIVERSITA DEL SALENTO	IT
15	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	FR
16	UMWELTBUNDESAMT GMBH	AT
17	GOETEBORGS UNIVERSITET	SE
18	MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM	UK
19	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK
20	DEUTSCHES KLIMARECHENZENTRUM GMBH	DE
21	NORGES FORSKNINGSRAD	NO
22	EUROPEAN MOLECULAR BIOLOGY LABORATORY	DE
23	UNIVERSITETET I TROMSOE	NO
24	EUROGOOS AISBL	BE
25	CONSORCIO PARA EL DISENO, CONSTRUCCION, EQUIPAMIENTO Y EXPLOTACION DE LA PLATAFORMA OCEANICA DE CANARIAS	ES
26	KOBENHAVNS UNIVERSITET	DK
27	ILMATIETEEN LAITOS	FI
28	LUNDS UNIVERSITET	SE
29	UNIVERSITA DEGLI STUDI DELLA TUSCIA	IT
30	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR
31	HELMHOLTZ ZENTRUM FUR OZEANFORSCHUNG KIEL	DE
32	NORSK INSTITUTT FOR LUFTFORSKNING	NO
33	CARDIFF UNIVERSITY	UK
34	THE UNIVERSITY OF EDINBURGH	UK
35	CSC-TIETEEN TIETOTEKNIIKAN KESKUS OY	FI
36	CONSORZIO INTERUNIVERSITARIO CINECA	IT
37	Stichting EGI	NL


European
Commission

2014

Excellent Science: European Research Infrastructures

Call - Integrating and opening research infrastructures of European interest

AQUAEXCEL2020

AQUAculture infrastructures for EXCELlence in European fish research towards 2020

At a glance

Acronym: AQUAEXCEL2020

Title: AQUAculture infrastructures for EXCELlence in European fish research towards 2020

Call: H2020-INFRAIA-2014-2015

Instrument: Research and Innovation action

Start date: 01/10/2015

End date: 30/09/2020

Duration: 60 months

Total Cost: € 9,708,867.00

EC Contribution: € 9,708,867.00

Consortium: 22 partners

Project Coordinator: INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE, FR

Abstract

AQUAEXCEL2020 aims to integrate top class European aquaculture research facilities of very diverse nature, covering all relevant scientific fields for research and innovation in aquaculture, from genetics to technology through pathology, physiology and nutrition. It will put in place a user-friendly one-stop access to high-quality services and resources from 39 installations covering both established and new aquaculture species, all types of experimental systems as well as sequencing facilities. Giving a prominent place to EU aquaculture industry research needs through a strong involvement of the European Aquaculture Technology and Innovation Platform, it will enable excellent research and sustainable innovation to both public and private sector. It will benefit from the support of the ESFRI infrastructures EMBRC (Marine Biology) and ELIXIR (Life Sciences data) and bring aquaculture research specificities to their agendas. AQUAEXCEL2020 will be a key vehicle in the improvement of aquaculture research practices to the benefit of industry through finalized research and innovation, and of excellent science through the development of highly innovative methods and approaches such as Virtual Laboratories, standardized experimental fish lines and nano-sensors. It will also benefit to society through the development of methods for sustainable aquaculture, such as the use of cleaner fish to control parasites or Integrated Multitrophic Aquaculture, and also through a better management of animal experiments for research according to the 3 R's, Reduction (via e.g. capitalization of data and provision of stable experimental fish lines), Refinement (via a better control of experimental procedures) and Replacement (via e.g. Virtual Laboratories). As a whole, AQUAEXCEL2020 will provide a world-class platform for all types of fish culture research, from biology to technology, in all types of rearing systems, with all major EU fish species, including the most promising new species.

Project's Partners List

AQUAEXCEL2020

AQUAculture infrastructures for EXCELlence in European fish research towards 2020

Project's partners	Name	Country
1	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	FR
2	HAVFORSKNINGSINSTITUTTET	NO
3	THE UNIVERSITY OF STIRLING	UK
4	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
5	HELLENIC CENTRE FOR MARINE RESEARCH	EL
6	NEMZETI AGRARKUTATASI ES INNOVACIOSKOZPONT	HU
7	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
8	NOFIMA AS	NO
9	JIHOCESKA UNIVERZITA V CESKYCH BUDEJOVICICH	CZ
10	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	NO
11	SINTEF FISKERI OG HAVBRUK AS	NO
12	UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA	ES
13	WAGENINGEN UNIVERSITY	NL
14	UNIVERSITEIT GENT	BE
15	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	NL
16	AquaTT UETP Ltd	IE
17	INRA TRANSFERT S.A.	FR
18	UNIVERSITE DE LORRAINE	FR
19	DANMARKS TEKNISKE UNIVERSITET	DK
20	CENTRO DE CIENCIAS DO MAR DO ALGARVE	PT
21	INSTITUTO ESPANOL DE OCEANOGRAFIA	ES
22	European Aquaculture Technology and Innovation Platform	BE

At a glance

Acronym: eLTER

Title: European Long-Term Ecosystem and socio-ecological Research Infrastructure

Call: H2020-INFRAIA-2014-2015

Instrument: Research and Innovation action

Start date: 01/06/2015

End date: 31/05/2019

Duration: 48 months

Total Cost: € 4,999,138.00

EC Contribution: € 4,999,138.00

Consortium: 28 partners

Project Coordinator: UMWELTBUNDESAMT GMBH, AT

eLTER

European Long-Term Ecosystem and socio-ecological Research Infrastructure

Abstract

A collective effort is needed to create the environmental research infrastructure for answering pressing questions in a world of rapid social, economic and environmental change. The overall aim of the eLTER project is to advance the European network of Long-Term Ecosystem Research sites and socio-ecological research platforms to provide highest quality services for multiple use of a distributed research infrastructure. eLTER´s major objectives and methods are to: (1) identify user needs for the research infrastructure in relation to major societal challenges through consultations with scientific, policy and business stakeholders and horizon scanning; (2) streamline the design of a cost-efficient pan-European network, able to address multiple ecosystem research issues, in collaboration with related global and European research infrastructures, e.g. LifeWatch; (3) develop the organisational framework for data integration and enable virtual access to the LTER data by enabling data publishing through distributed Data Nodes and by providing access to data on key research challenges through a Data Integration Platform; (4) foster the societal relevance, usability and multiple use of information, data and services through new partnerships with the providers of remotely sensed data, analytical services and scenario testing models, and via the adoption of new measurement technologies. The LTER-Europe network and the European Critical Zone community will collaborate to achieve these goals. 162 sites in 22 countries will provide data on long-term trends in environmental change, some reaching back 100 years. Test cases using these data will address a range of environmental and social issues to push innovation in network level services and steer conceptual developments. The envisaged “LTER Infrastructure” will enable European-scale investigation of major ecosystems and socio-ecological systems, and support knowledge-based decision making at multiple levels.

Project's Partners List

eLTER

European Long-Term Ecosystem and socio-ecological Research Infrastructure

Project's partners	Name	Country
1	UMWELTBUNDESAMT GMBH	AT
2	SUOMEN YMPARISTOKESKUS	FI
3	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
4	FORSCHUNGSZENTRUM JULICH GMBH	DE
5	HELMHOLTZ-ZENTRUM FUER UMWELTFORSCHUNG GMBH - UFZ	DE
6	THE RESEARCH COMMITTEE OF THE TECHNICAL UNIVERSITY OF CRETE	EL
7	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
8	EUROPEJSKIE REGIONALNE CENTRUM EKOHYDROLOGII POLSKIEJ AKADEMII NAUK	PL
9	UNIVERZITET U NOVOM SADU	RS
10	SVERIGES LANTBRUKSUNIVERSITET	SE
11	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
12	VLAAMS GEWEST	BE
13	INSTITUT PO BIORAZNOOBRAZIE I EKOSISTEMNI IZSLEDVANIYA BALGARSKA AKADEMIYA NA NAUKITE	BG
14	GISAT S.R.O.	CZ
15	HELSINGIN YLIOPISTO	FI
16	MASINOTEK OY	FI
17	SENCKENBERG GESELLSCHAFT FUR NATURFORSCHUNG	DE
18	GEOHIRES INTERNATIONAL GMBH	DE
19	MAGYAR TUDOMANYOS AKADEMIA OKOLOGIAI KUTATOKOZPONT	HU
20	BEN-GURION UNIVERSITY OF THE NEGEV	IL
21	LATVIJAS UNIVERSITATES AGENTURA LATVIJAS UNIVERSITATES BIOLOGIJAS INSTITUTS	LV
22	RIJKSUNIVERSITEIT GRONINGEN	NL
23	FUNDACAO DA FACULDADE DE CIENCIAS DA UNIVERSIDADE DE LISBOA	PT
24	UNIVERSITATEA DIN BUCURESTI	RO
25	INSTITUTE OF LANDSCAPE ECOLOGY OF THE SLOVAK ACADEMY OF SCIENCES	SK
26	ZNANSTVENORAZISKOVALNI CENTER SLOVENSKE AKADEMIJE ZNANOSTI IN UMETNOSTI	SI
27	UNIVERSIDAD DE GRANADA	ES
28	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES

HYDRALAB-PLUS

HYDRALAB+ Adapting to climate change

At a glance

Acronym: HYDRALAB-PLUS

Title: HYDRALAB+ Adapting to climate change

Call: H2020 -INFRAIA-2014-2015

Instrument: Research and Innovation action

Start date: 01/09/2015

End date: 31/08/2019

Duration: 48 months

Total Cost: € 9,979,376.17

EC Contribution: € 9,979,376.17

Consortium: 24 partners

Project Coordinator: STICHTING DELTARES, NL

Abstract

HYDRALAB is an advanced network of environmental hydraulic institutes in Europe, which has been effective in providing access to a suite of major and unique environmental hydraulic facilities from across the whole European scientific community. A continuation project will prepare environmental hydraulic modelling for the upcoming urgent technical challenges associated with adaptations for climate change. A multi-disciplinary approach is essential to meet these challenges. We denote the project HYDRALAB+, in recognition of the added value that will follow from our network changing to enhance the collaboration between specialists and engaging with a new range of stakeholders. The issues associated with climate change impacts on rivers and coasts are significant enough to ask the scientific community to which we open up our facilities to focus their research efforts on adaptations for climate change. We plan to issue themed calls for proposals for access to the facilities, with scientific merit as the main selection criterion, but with preference to the proposals that also address issues of adaptation to climate change impact. In HYDRALAB+, with the prospect of climate change, we will build networking activities that will also involve the wider hydraulic community in the process of generating the deliverables of the project. The first Workshop in the project will be devoted to working together with the larger European hydraulics community not directly involved in HYDRALAB. Increased emphasis will be placed by HYDRALAB+ on engagement with industry – a theme that will be delivered initially through the vehicle of a focussed Workshop between HYDRALAB researchers and industry. We will work together with industry to have HYDRALAB+ become part of the innovation cycle by bringing development to market – this is particularly relevant for the instruments we develop - to involve industry in our range of project deliverables.

Project's Partners List

HYDRALAB-PLUS

HYDRALAB+ Adapting to climate change

Project's partners	Name	Country
1	STICHTING DELTARES	NL
2	AALTO-KORKEAKOULUSAATIO	FI
3	CENTRO DE ESTUDIOS Y EXPERIMENTACION DE OBRAS PUBLICAS - CEDEX	ES
4	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
5	DHI	DK
6	INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU GEOLOGIE SI GEOECOLOGIE MARINA-GEOECOMAR	RO
7	HR WALLINGFORD LIMITED	UK
8	HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH	DE
9	INTERNATIONAL ASSOCIATION OF HYDRAULIC ENGINEERING AND RESEARCH	NL
10	INSTYTUT BUDOWNICTWA WODNEGO POLSKIEJ AKADEMII NAUK	PL
11	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
12	LOUGHBOROUGH UNIVERSITY	UK
13	LABORATORIO NACIONAL DE ENGENHARIA CIVIL	PT
14	GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER	DE
15	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
16	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	NO
17	Samui Design & Management Ltd	UK
18	THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN	UK
19	UNIVERSITA DEGLI STUDI DI CATANIA	IT
20	UNIVERSIDAD DE CANTABRIA	ES
21	UNIVERSITY OF HULL	UK
22	UNIVERSITAT POLITECNICA DE CATALUNYA	ES
23	UNIVERSIDADE DO PORTO	PT
24	UNIVERSITEIT TWENTE	NL

At a glance

Acronym: JERICO-NEXT

Title: Joint European Research Infrastructure network for Coastal Observatory – Novel European eXpertise for coastal observaTories

Call: H2020-INFRAIA-2014-2015

Instrument: Research and Innovation action

Start date: 01/09/2015

End date: 31/08/2019

Duration: 48 months

Total Cost: € 9,998,876.47

EC Contribution: € 9,998,876.47

Consortium: 33 partners

Project Coordinator: INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER, FR

JERICO-NEXT

Joint European Research Infrastructure network for Coastal Observatory – Novel European eXpertise for coastal observaTories

Abstract

The coastal area is the most productive and dynamic environment of the world ocean with significant resources and services for mankind. JERICO-NEXT (33 organizations from 15 countries) emphasizes that the complexity of the coastal ocean cannot be well understood if interconnection between physics, biogeochemistry and biology is not guaranteed. Such integration requires new technological developments allowing continuous monitoring of a larger set of parameters. In the continuity of JERICO(FP7), the objective of JERICO-NEXT consists in strengthening and enlarging a solid and transparent European network in providing operational services for the timely, continuous and sustainable delivery of high quality environmental data and information products related to marine environment in European coastal seas Other objectives are: Support European coastal research communities, enable free and open access to data, enhance the readiness of new observing platform networks by increasing the performance of sensors, showcase of the adequacy of the so-developed observing technologies and strategies, propose a medium-term roadmap for coastal observatories through a permanent dialogue with stakeholders. Innovation JERICO-NEXT is based of a set of technological and methodological innovations. One main innovation potential is to provide a simple access to a large set of validated crucial information to understand the global change in coastal areas. Although JERICO-NEXT already includes industrial partners, it will be open to other research institutes, laboratories and private companies which could become associated partners to the project. Added values of JERICO NEXT JERICO-RI shall send data and information in an operational mode to European data systems, with dedicated service access. One of the strengths of JERICO-NEXT lies in the fact that technological and methodological developments shall be deployed in natural environment.

Project's Partners List

JERICO-NEXT

Joint European Research Infrastructure network for Coastal Observatory – Novel European eXpertise for coastal observaTories

Project's partners	Name	Country
1	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
2	FUNDACION AZTI - AZTI FUNDAZIOA	ES
3	BLUE LOBSTER IT LIMITED	UK
4	THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS	UK
5	CENTRO EURO-MEDITERRANEO SUI CAMBIAMENTI CLIMATICI SCARL	IT
6	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
7	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
8	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
9	STICHTING DELTARES	NL
10	ETT SPA	IT
11	EUROGOOS AISBL	BE
12	FLUIDION	FR
13	ILMATIETEEN LAITOS	FI
14	HELLENIC CENTRE FOR MARINE RESEARCH	EL
15	HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG GMBH	DE
16	INSTITUTO HIDROGRAFICO	PT
17	HAVFORSKNINGSINSTITUTTET	NO
18	INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES	BG
19	INTERNATIONAL RESEARCH INSTITUTE OFSTAVANGER AS	NO
20	MARIENE INFORMATIE SERVICE MARIS BV	NL
21	MARINE INSTITUTE	IE
22	NORSK INSTITUTT FOR VANNFORSKNING	NO
23	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT
24	MINISTERIE VAN INFRASTRUCTUUR EN MILIEU	NL
25	SLR ENVIRONMENTAL CONSULTING(IRELAND)LIMITED	IE
26	SMARTBAY IRELAND LIMITED	IE
27	SVERIGES METEOROLOGISKA OCH HYDROLOGISKA INSTITUT	SE
28	SOCIB - CONSORCIO PARA EL DISENO, CONSTRUCCION, EQUIPAMIENTO Y EXPLOTACION DEL SISTEMA DE OBSERVACION COSTERO DE LAS ILLES BALEARS	ES
29	SUOMEN YMPARISTOKESKUS	FI
30	UNIVERSITA TA MALTA	MT
31	UNIVERSITAT POLITECNICA DE CATALUNYA	ES
32	VLAAMS INSTITUUT VOOR DE ZEE VZW	BE
33	EURO-ARGO ERIC	FR


European
Commission

2014

Excellent Science: European Research Infrastructures

Call - Support to innovation, human resources, policy and international cooperation

At a glance

Acronym: COOP_PLUS

Title: Cooperation of research infrastructures to address global challenges in the environment field

Call: H2020 -INFRASUPP-2014-2

Instrument: Coordination & support action

Start date: 01/03/2016

End date: 31/08/2018

Duration: 30 months

Total Cost: € 1,997,990.00

EC Contribution: € 1,997,990.00

Consortium: 9 partners

Project Coordinator: UNIVERSIDAD DE GRANADA, ES

COOP_PLUS

Cooperation of research infrastructures to address global challenges in the environment field

Abstract

The COOP+ project is motivated by the interest of several Research Infrastructures in Europe to benefit from extending international collaboration with other Research Infrastructures in their areas of expertise at global, worldwide level. The general goal of COOP+ is to strengthen the links and coordination of the ESFRI Research Infrastructures related to marine science, Arctic research and biodiversity with international counterparts and to leverage international scientific cooperation and data exchange with non-EU countries aiming at creating a common ground for the development of a global network of research infrastructures that are able to address Global environmental challenges. The project will be the central hub for worldwide collaboration of the RIs involved, coordinating all their common activities and fostering international agreements. As the EC communication emphasized, Global Challenges are very important drivers for research and innovation, and COOP+ will focus on them, and, according to the experience in COOPEUS (FP7), will try to reinforce the cross-disciplinary view, adding participants for other regions. COOP+ will use the methodology of case studies to assess the cooperation capabilities of international RIs, and to learn how to cope with global environmental challenges. This cross-disciplinary and global collaboration among Research Infrastructures tha is required to address these challenges implies a significant effort on common practices including access and sharing of data. COOP+ will promote an open coordination framework for Global Cooperation, with initial participation from relevant RI from EU, US, Canada, Australia and Brazil, and providing support to new agreements on reciprocal use or access to RI, openness, joint development of new resources including co-financing.

Project's Partners List

COOP_PLUS

Cooperation of research infrastructures to address global challenges in the environment field

Project's partners	Name	Country
1	UNIVERSIDAD DE GRANADA	ES
2	ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA	IT
3	ILMATIETEEN LAITOS	FI
4	EISCAT SCIENTIFIC ASSOCIATION	SE
5	UNIVERSITAET BREMEN	DE
6	HELSINGIN YLIOPISTO	FI
7	MARINE INSTITUTE	IE
8	UNIVERSITA DEGLI STUDI DELLA TUSCIA	IT
9	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR

At a glance

Acronym: GLOBIS-B

Title: GLOBal Infrastructures for Supporting Biodiversity research

Call: H2020 -INFRASUPP-2014-2

Instrument: Coordination & support action

Start date: 01/06/2015

End date: 31/05/2018

Duration: 36 months

Total Cost: € 1,005,875.00

EC Contribution: € 1,005,875.00

Consortium: 6 partners

Project Coordinator: UNIVERSITEIT VAN AMSTERDAM, NL

GLOBIS-B

GLOBal Infrastructures for Supporting Biodiversity research

Abstract

Biodiversity and ecosystem research is addressing the grand societal challenge to predict the biosphere under global environmental change. To advance scientific progress in understanding the complexity of natural systems it is required that supporting research infrastructures cooperate globally to serve the essential data at different temporal and spatial scales. This includes providing the capabilities to process big and massive datasets. GLOBIS-B is a global cooperation of world-class research infrastructures with a focus on targeted services to support frontier research that deals with predicting the biosphere and measuring the indicators of biodiversity change. The project brings key scientists together with global research infrastructure operators and legal interoperability experts to address research needs and infrastructure services underpinning the concept of Essential Biodiversity Variables (EBVs). EBVs were proposed by the GEO Biodiversity Observation Network (GEO BON) and are a prerequisite for understanding biodiversity and ecosystem change. Integrated scientific and technical workshops will identify the required primary data, analysis tools, methodologies etc. to develop an infrastructure development agenda for computing EBVs and to explore the discovery of required and interoperable data at larger spatial and temporal scales. Applications of common standards and workflows that are 'self-documenting' and openly shared facilitate international cooperation, and realistic and pragmatic solutions are explored to streamline the legal bottlenecks for the reciprocal use of data and software tools from different origins. Solutions should be workable for both the scientific communities and the cooperating research infrastructures, especially in regard to achieving direct machine-machine interactions. The interaction with national, supra-national and global policy bodies contributes to potential refinements of general policies supporting legal interoperability.

Project's Partners List

GLOBIS-B

Global Infrastructures for Supporting Biodiversity Research

Project's partners	*Name*	*Country*
1	UNIVERSITEIT VAN AMSTERDAM	NL
2	CARDIFF UNIVERSITY	UK
3	MAAT FRANCE SARL	FR
4	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
5	UNIVERSIDAD DE ALCALA	ES
6	MARTIN-LUTHER-UNIVERSITAET HALLE-WITTENBERG	DE

At a glance

Acronym: ODIP 2

Title: Extending the Ocean Data Interoperability Platform

Call: H2020-INFRASUPP-2014-2

Instrument: Coordination & support action

Start date: 01/04/2015

End date: 31/03/2018

Duration: 36 months

Total Cost: € 1,912,086.25

EC Contribution: € 1,912,086.25

Consortium: 19 partners

Project Coordinator: NATURAL ENVIRONMENT RESEARCH COUNCIL, UK

ODIP 2

Extending the Ocean Data Interoperability Platform

Abstract

The Ocean Data Interoperability Platform project is promoting the development of a common global framework for marine data management by developing interoperability between existing regional e-infrastructures. Through a series of international workshops attracting relevant domain experts a number of prototype interoperability solutions will be developed which will be implemented by the regional data infrastructures to provide users with open access to good quality multidisciplinary data and associated services. Improved access to a range of marine data will facilitate re-use of the data and support researchers in addressing grand challenges such as climate change and conservation of marine resources.

Project's Partners List

ODIP 2

Extending the Ocean Data Interoperability Platform

Project's partners	Name	Country
1	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
2	MARIENE INFORMATIE SERVICE MARIS BV	NL
3	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT
4	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
5	HELLENIC CENTRE FOR MARINE RESEARCH	EL
6	AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE	IT
7	UNIVERSITE DE LIEGE	BE
8	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
9	INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE	BE
10	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
11	ALFRED-WEGENER-INSTITUT HELMHOLTZ- ZENTRUM FUER POLAR- UND MEERESFORSCHUNG	DE
12	BUNDESAMT FUR SEESCHIFFFAHRT UND HYDROGRAPHIE	DE
13	ALL-RUSSIAN RESEARCH INSTITUTE OF HYDROMETEOROLOGICAL INFORMATION-WORLD DATA CENTRE	RU
14	VLAAMS INSTITUUT VOOR DE ZEE VZW	BE
15	UNIVERSITAET BREMEN	DE
16	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
17	52°North Initiative for Geospatial Open Source Software GmbH	DE
18	IEEE FRANCE SECTION	FR
19	SOCIB - CONSORCIO PARA EL DISENO, CONSTRUCCION, EQUIPAMIENTO Y EXPLOTACION DEL SISTEMA DE OBSERVACION COSTERO DE LAS ILLES BALEARS	ES


European
Commission

2014

Introduction to Leadership in enabling and industrial technologies (LEIT)

Call - Information and Communication Technologies

At a glance

Acronym: WiMUST

Title: Widely scalable Mobile Underwater Sonar Technology

Call: H2020-ICT-2014-1

Instrument: Research and Innovation action

Start date: 01/02/2015

End date: 31/01/2018

Duration: 36 months

Total Cost: € 3,970,081.25

EC Contribution: € 3,970,081.25

Consortium: 9 partners

Project Coordinator: UNIVERSITA DEGLI STUDI DI GENOVA,IT

WiMUST

Widely scalable Mobile Underwater Sonar Technology

Abstract

The WiMUST (Widely scalable Mobile Underwater Sonar Technology) project aims at expanding and improving the functionalities of current cooperative marine robotic systems, effectively enabling distributed acoustic array technologies for geophysical surveying with a view to exploration and geotechnical applications. Recent developments have shown that there is vast potential for groups of marine robots acting in cooperation to drastically improve the methods available for ocean exploration and exploitation. Traditionally, seismic reflection surveying is performed by vessel towed streamers of hydrophones acquiring reflected acoustic signals generated by acoustic sources (either towed or onboard a vessel). In this context, geotechnical surveying for civil and commercial applications (e.g., underwater construction, infrastructure monitoring, mapping for natural hazard assessment, environmental mapping, etc.) aims at seafloor and sub-bottom characterization using towed streamers of fixed length that are extremely cumbersome to operate. The vision underlying the WiMUST proposal is that of developing advanced cooperative and networked control / navigation systems to enable a large number (tens) of marine robots (both on the surface and submerged) to interact by sharing information as a coordinated team (not only in pairs). The WiMUST system may be envisioned as an adaptive variable geometry acoustic array. By allowing the group of surface and submerged vehicles to change their geometrical configuration, an end-user can seamlessly change the geometry of the ”virtual streamer” trailing the emitter, something that has not been achieved in practice and holds potential to drastically improve ocean surveying. The project brings together a group of research institutions, geophysical surveying companies and SMEs with a proven track record in autonomous adaptive and robust systems, communications, networked cooperative control and navigation, and marine robot design and fabrication.

Project's Partners List

WiMUST

Widely scalable Mobile Underwater Sonar Technology

Project's partners	Name	Country
1	UNIVERSITA DEGLI STUDI DI GENOVA	IT
2	ASSOCIACAO DO INSTITUTO SUPERIOR TECNICO PARA A INVESTIGACAO E DESENVOLVIMENTO	PT
3	CINTAL - CENTRO INVESTIGACAO TECNOLOGICA DO ALGARVE	PT
4	THE UNIVERSITY OF HERTFORDSHIRE HIGHER EDUCATION CORPORATION	UK
5	EVOLOGICS GMBH	DE
6	GRAAL TECH SRL	IT
7	CGGVERITAS SERVICES SA	FR
8	GEO MARINE SURVEY SYSTEMS BV	NL
9	GEOSURVEYS CONSULTORES EM GEOFISICA LDA	PT


European
Commission

2014

Introduction to Leadership in enabling and industrial technologies (LEIT)

Call - Space

MyOcean FO

Pre-Operational Marine Service Continuity in Transition towards Copernicus

At a glance

Acronym: MyOcean FO

Title: Pre-Operational Marine Service Continuity in Transition towards Copernicus

Call: H2020-Adhoc-2014-20

Instrument: Coordination and support action

Start date: 01/10/2014

End date: 31/05/2015

Duration: 8 months

Total Cost: € 6.000.000,04

EC Contribution: € 6.000.000,00

Consortium: 57 participants

Project Coordinator: MERCATOR OCEAN, FR

Abstract

The main objective of the MyOcean Follow On project will be to operate a rigorous, robust and sustainable Ocean Monitoring and Forecasting component of the pre-operational Copernicus Marine Service delivering ocean physical state and ecosystem information to intermediate and downstream users in the areas of marine safety, marine resources, marine and coastal environment and weather, climate and seasonal forecasting. This is highly consistent with the objective of the HORIZON 2020 Work Programme 2014-2015 establishing the need for interim continuity of the pre-operational services developed by MyOcean 2 before the fully operational services of Copernicus. The project proposes to sustain the current pre-operational marine activities until March 2015 in order to avoid any interruption in the critical handover phase between pre-operational and fully operational services. In effect, any significant interruption in these services could potentially jeopardize several important high-level policy objectives and undermine other related scientific activities. In the period from October 2014 to March 2015, MyOcean-FO will ensure a controlled continuation and extension of the services already implemented in MyOcean and MyOcean2 FP7 projects that have advanced the pre-operational marine service capabilities. To enable the move to full operations, MyOcean-FO is targeting the prototype operations, and developing the management and coordination to continue the provision of Copernicus Marine service products and the link with independent R&D activities. MyOcean-FO will produce and deliver services based upon the common-denominator ocean state variables that are required to help meet the needs for information for environmental and civil security policy making, assessment and implementation. MyOcean-FO is also expected to have a significant impact on the emergence of a technically robust and sustainable Copernicus Service infrastructure in Europe.

Project's Participants List

MyOcean FO

Pre-Operational Marine Service Continuity in Transition towards Copernicus

Project's partners	Name	Country
1	MERCATOR OCEAN	FR
2	MET OFFICE	UK
3	ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA	IT
4	STIFTELSEN NANSEN SENTER FOR MILJOOG FJERNMALING	NO
5	DANMARKS METEOROLOGISKE INSTITUT	DK
6	Puertos del Estado	ES
7	COLLECTE LOCALISATION SATELLITES SA	FR
8	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
9	METEO-France	FR
10	KONINKLIJK NEDERLANDS METEOROLOGISCH INSTITUUT-KNMI	NL
11	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
12	METEOROLOGISK INSTITUTT	NO
13	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR
14	HELLENIC CENTRE FOR MARINE RESEARCH	EL
15	SVERIGES METEOROLOGISKA OCH HYDROLOGISKA INSTITUT	SE
16	S.A. EDISOFT-EMPRESA DE SERVICOS E DESENVOLVIMENTO DE SOFTWARE SA	PT
17	INSTITUT NATIONAL DE RECHERCHE HALIEUTIQUE	MA
18	INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES	BG
19	UNIVERSITY OF CYPRUS	CY
20	BUNDESAMT FUR SEESCHIFFFAHRT UND HYDROGRAPHIE	DE
21	BROCKMANN CONSULT GMBH	DE
22	DANMARKS TEKNISKE UNIVERSITET	DK
23	AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES CIENTIFICAS	ES
24	STARLAB BARCELONA SL	ES
25	TALLINNA TEHNIKAULIKOOL	EE
26	ALTAMIRA INFORMATION SL	ES
27	ACRI-ST SAS	FR
28	ILMATIETEEN LAITOS	FI
29	AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE	IT
30	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT
31	Istituto Superiore per la Protezione e la Ricerca Ambientale	IT
32	ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH LIMITED	IL
33	HAVFORSKNINGSINSTITUTTET	NO
34	INSTITUTO ESPANOL DE OCEANOGRAFIA	ES
35	UNIVERSITA TA MALTA	MT
36	INSTITUTO SUPERIOR TECNICO	PT
37	INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE MARINA GRIGORE ANTIPA	RO

Project's Participants List

MyOcean FO

Pre-Operational Marine Service Continuity in Transition towards Copernicus

Project's partners	Name	Country
38	FONDAZIONE CENTRO EURO-MEDITERRANEO SUI CAMBIAMENTI CLIMATICI	IT
39	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
40	PLYMOUTH MARINE LABORATORY	UK
41	THE UNIVERSITY OF READING	UK
42	MARINE INSTITUTE	IE
43	THE SECRETARY OF STATE FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS	UK
44	INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE	BE
45	HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG GMBH	DE
46	NORSK INSTITUTT FOR VANNFORSKNING	NO
47	ETHNIKO KAI KAPODISTRIAKO PANEPISTIMIO ATHINON	EL
48	NACIONALNI INSTITUT ZA BIOLOGIJO	SI
49	AARHUS UNIVERSITET	DK
50	EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS	UK
51	SUOMEN YMPARISTOKESKUS	FI
52	LATVIJAS UNIVERSITATE	LV
53	APLINKOS APSAUGOS AGENTURA	LT
54	INSTYTUT MORSKI W GDANSKU	PL
55	MIDDLE EAST TECHNICAL UNIVERSITY	TR
56	UNIVERSITY OF PLYMOUTH	UK
57	SCIENTIFIC FOUNDATION NANSEN INTERNATIONAL ENVIRONMENTAL AND REMOTE SENSING CENTRE	RU

SPICES

Space-borne observations for detecting and forecasting sea ice cover extremes

At a glance

Acronym: SPICES

Title: Space-borne observations for detecting and forecasting sea ice cover extremes

Call: H2020-EO-2014

Instrument: Research and innovation action

Start date: 01/06/2015

End date: 31/05/2018

Duration: 36 months

Total Cost: € 2,995,678.75

EC Contribution: € 2,995,678.00

Consortium: 14 participants

Project Coordinator: ILMATIETEEN LAITOS, FI

Abstract

The main objective of this proposal is to develop new methods to retrieve sea ice parameters from existing (and imminent) satellite sensors to provide enhanced products for polar operators and prediction systems, specifically addressing extreme and unexpected conditions. Automatic remote sensing products traditionally provide general information on sea ice conditions such as ice extent and concentration. However, for ice charting, tactical navigation and management of off-shore activities much more important is to know and avoid hazardous sea ice conditions. In general, sea ice hazards are related to sea ice thickness. More often than not polar ships and off-shore platforms are only operating during summer seasons and certain regions. This is because they are designed to resist typical forces of induced by pack ice, but they are not designed to resist the extreme sea ice conditions. Ongoing climate warming has manifested as shrinking and thinning of pack ice in the Arctic. This is a primary driver for the increasing shipping, oil and gas explorations and mining activities in the Arctic. However, severe sea ice conditions still exist and in consequence many locations are impossible for ship based operations. Moreover, year-to-year variability of sea ice is very large and hazardous multiyear ice (MYI) floes sometimes appear also in typically seasonally ice free regions. In order to response needs of increase polar activities, we propose to focus on detection of sea ice extremes and automatic production of “sea ice warnings” products. In particular, we aim for a detection of MYI floes in an area composed mostly first-year ice from synthetic aperture radar (SAR), heavily ridged ice regions from SAR, the thickest ice from radar altimeter (RA) thickness profiles, regional anomalies of thick or thin ice via passive microwave (PMW) data, sea ice areas vulnerable for the wave action, detection of early/late melting season and improving capabilities to forecast seasonal sea ice extremes.

Project's Participants List

SPICES

Space-borne observations for detecting and forecasting sea ice cover extremes

Project's partners	Name	Country
1	ILMATIETEEN LAITOS	FI
2	STIFTELSEN NANSEN SENTER FOR MILJOOG FJERNMALING	NO
3	METEOROLOGISK INSTITUTT	NO
4	DANMARKS METEOROLOGISKE INSTITUT	DK
5	DANMARKS TEKNISKE UNIVERSITET	DK
6	UNIVERSITA POLITECNICA DELLE MARCHE	IT
7	EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS	UK
8	UNIVERSITAET HAMBURG	DE
9	UNIVERSITAET BREMEN	DE
10	ALFRED-WEGENER-INSTITUT HELMHOLTZ- ZENTRUM FUER POLAR- UND MEERESFORSCHUNG	DE
11	MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN EV	DE
12	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
13	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
14	ISTANBUL TEKNIK UNIVERSITESI	TR

2015

SOCIETAL CHALLENGE 1: Health, Demographic Change and Wellbeing

Call – PERSONALISING HEALTH AND CARE

At a glance

Acronym: BlueHealth

Title: Linking Up Environment, Health and Climate for Inter-sector Health Promotion and Disease Prevention in a Rapidly Changing Environment

Call: H2020-PHC-2015-two-stage

Instrument: Research and Innovation action

Start date: 01/01/2016

End date: 30/06/2020

Duration: 54 months

Total Cost: € 5,998,671.25

EC Contribution: € 5,998,671.25

Consortium: 9 partners

Project Coordinator: THE UNIVERSITY OF EXETER, UK

BlueHealth

Linking Up Environment, Health and Climate for Inter-sector Health Promotion and Disease Prevention in a Rapidly Changing Environment

Abstract

The BlueHealth Consortium brings together a multi-disciplinary team of experts reaching across all 28 European Union countries. The proposed 4.5 year BlueHealth Project takes an international, interdisciplinary and multi-sector approach to health promotion and disease prevention by investigating the relationship between the EU's 'blue infrastructure' and the health and well-being of its citizens. Blue infrastructure refers to the network of natural and man-made aquatic environments providing a range of multi-sectorial services (e.g. transportation, fresh water provision). There has been no systematic attempt to detail the potential impacts of our blue infrastructure on health promotion and disease prevention, nor to develop guidelines on how health should be considered when developing blue infrastructure interventions, particularly across sectors. BlueHealth will address this gap. The majority of Europeans live in cities built on inland waterways, lakes, or the coasts. BlueHealth will focus on urban blue infrastructures. The EU's blue infrastructure offers significant health and well-being related opportunities and benefits (eg urban cooling, recreation), but also challenges and stressors (eg flooding, microbial/chemical pollution). BlueHealth will investigate these trade-offs, with the aims of quantifying the impacts on population health and well-being of interventions and policy initiatives connected to blue infrastructure, and identifying success factors and obstacles of inter-sectorial collaborations. Assessments of health and environment benefits, risks and costs will improve our understanding of the role of urban blue infrastructures on across-sector health promotion and disease prevention. The Partners have collaborations across the Environment, Health, and Climate sectors, and extensive experience with inter-institutional, multi-sectorial, interdisciplinary research programmes employing innovation, stakeholder engagement, dissemination, and policy impact.

BlueHealth

Project's Partners List

Linking Up Environment, Health and Climate for Inter-sector Health Promotion and Disease Prevention in a Rapidly Changing Environment

Project's partners	Name	Country
1	THE UNIVERSITY OF EXETER	UK
2	FUNDACION PRIVADA INSTITUTO DE SALUD GLOBAL BARCELONA	ES
3	LUNDS UNIVERSITET	SE
4	EESTI MAAULIKOOL	EE
5	RIJKSINSTITUUT VOOR VOLKSGEZONDHEID EN MILIEU	NL
6	WORLD HEALTH ORGANIZATION	CH
7	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	EL
8	ISTITUTO SUPERIORE DI SANITA	IT
9	FONDAZIONE CENTRO EURO-MEDITERRANEO SUI CAMBIAMENTI CLIMATICI	IT


European
Commission

2015

Societal Challenge 3: Secure, Clean and Efficient Energy

Call – COMPETITIVE LOW-CARBON ENERGY

DEMOGRAVI3

Demonstration of the GRAVI3 technology – innovative gravity foundation for offshore wind

At a glance

Acronym: DEMOGRAVI3

Title: "Demonstration of the GRAVI3 technology – innovative gravity foundation for offshore wind"

Call: H2020-LCE-2015-2

Instrument: Innovation action

Start date: 01/01/2016

End date: 31/12/2019

Duration: 48 months

Total Cost: € 26,523,602.50

EC Contribution: € 19,037,465.51

Consortium: 11 partners

Project Coordinator: EDP RENEWABLES EUROPE SL, ES

Abstract

Offshore wind business competitiveness is strongly related to substructures and offshore logistics. DEMOGRAVI3 addresses these areas through a very promising solution called GRAVI3. GRAVI3 is an innovative hybrid steel-concrete offshore sub-structure for transitional water depths between 35 and 60m. It will sustainably reduce the levelized cost of energy by up to 15% by combining the following vectors: - Using three concrete caissons, with water ballast, instead of more complex and costly steel solutions and anchoring systems - Using a smaller steel structure - Performing all construction and assembly onshore and towing the complete unit to the site where it is submerged with an innovative and robust method. - Preventing the use of heavy lift vessels and reducing the level of complexity and risk of offshore operations. GRAVI3 has undergone the typical technology development process and is presently at TRL5. The logical next steps is the demonstration at full scale in real operational conditions. Thus, the project fits perfectly to the addressed Call for Proposals as the project will support technology development and bring the technology close to market readiness. The proposed project will design, engineer, build, assemble, transport, install and demonstrate a full scale foundation, equipped with a 2 MW offshore wind turbine, in a consented and grid connected demonstration site. Additionally, the project will undertake further technology development for improved design and perform an in depth evaluation of the technology's future industrialization, competitiveness and bankability. The core partners are committed to bring the GRAVI3 technology to market intending to 1) form a company with the objective to commercialize the GRAVI3 technology; 2) prepare themselves to take on important segments of the industrial value chain which will be put in place to move the GRAVI3 product forward; 3) foster the use of the technology, namely in the wind farms they are developing.

Project's Partners List

DEMOGRAVI3

Demonstration of the GRAVI3 technology – innovative gravity foundation for offshore wind

Project's partners	Name	Country
1	EDP RENEWABLES EUROPE SL	ES
2	CNET - Centre for New Energy Technologies, S.A.	PT
3	A. Silva Matos - Energia, SA	PT
4	TECNICA Y PROYECTOS SA	ES
5	UNIVERSIDAD POLITECNICA DE MADRID	ES
6	WAVEC/OFFSHORE RENEWABLES - CENTRO DE ENERGIA OFFSHORE ASSOCIACAO	PT
7	ACCIONA INFRAESTRUCTURAS S.A.	ES
8	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	DE
9	GAVIN AND DOHERTY GEOSOLUTIONS LTD	IE
10	Global Maritime AS	NO
11	EDP RENEWABLES EUROPE SL	ES

DemoWind 2

DemoWind 2 ERA-NET Cofund action - delivering cost reduction in offshore wind

At a glance

Acronym: DemoWind 2

Title: DemoWind 2 ERA-NET Cofund action - delivering cost reduction in offshore wind

Call: H2020-LCE-2015-3

Instrument: ERA-NET-Cofund

Start date: 01/01/2016

End date: 31/12/2020

Duration: 60 months

Total Cost: € 25,932,924.00

EC Contribution: € 8,557,864.92

Consortium: 8 partners

Project Coordinator: The Department Of Energy and Climate Change, UK

Abstract

DemoWind 2 proposes to bring together a number of national and transnational organisations with an interest in accelerating cost reduction in offshore wind. It follows on from the first DemoWind initiative that launched in 2014 and, like its predecessor, is focussed on enabling industry, through partnership, to push technologies through TRLs 5-6 to 6-7 in transnationally funded projects. We aim to connect existing and new European offshore wind demonstration opportunities, exchange knowledge and facilitate the acceleration of cost reducing innovative technologies to commercialisation. This action will contribute to European cost reduction targets for offshore wind, economic development of the European offshore wind sector and help to maintain the EU's internationally leading position in offshore wind. Reducing technology cost is essential to increasing the deployment of offshore wind, making a significant contribution to the EU's climate change targets, replacing aging fossil burning power plants with affordable energy. The main objectives of the DemoWind 2 project are split into two parts: •Part A is dedicated to activities related to the main co-funded Call (Work Packages 1-5) •Part B is dedicated to additional activities (Work Packages 6-7), which will be aimed at widening the dissemination of technologies supported by DemoWind 2 and at identifying and taking forward further opportunities for the DemoWind 2 partners and others to fund further RD&D activities targeting cost reduction in offshore wind without Commission funding. Initially, these additional activities will involve DemoWind 2 strengthening links with existing OSW industry groups looking at innovation and cost reduction, specifically the OWA Europe programme.

Project's Partners List

DemoWind 2

DemoWind 2 ERA-NET Cofund action - delivering cost reduction in offshore wind

Project's partners	Name	Country
1	The Department Of Energy and Climate Change	UK
2	ENERGISTYRELSEN	DK
3	AGENTSCHAP VOOR INNOVATIE DOOR WETENSCHAP EN TECHNOLOGIE	BE
4	MINISTERIE VAN ECONOMISCHE ZAKEN	NL
5	CENTRO PARA EL DESARROLLO TECNOLOGICO INDUSTRIAL.	ES
6	NORGES FORSKNINGSRAD	NO
7	MINISTERIO DE ECONOMIA Y COMPETITIVIDAD	ES
8	ENOVA SF	NO

ELICAN

Self-installing telescopic substructure for low-cost craneless installation of complete offshore wind turbines. deep offshore 5mw prototype

At a glance

Acronym: ELICAN

Title: Self-installing telescopic substructure for low-cost craneless installation of complete offshore wind turbines. deep offshore 5mw prototype

Call: H2020-LCE-2015-2

Instrument: Innovation Action

Start date: 01/01/2016

End date: 31/12/2018

Duration: 36 months

Total Cost: € 17,107,301.25

EC Contribution: € 11,181,986.88

Consortium: 4 partners

Project Coordinator: ESTEYCO SAP, ES

Abstract

In ELICAN, a strong team of complementary European companies with worldwide leading presence in the Wind Energy industry join forces to provide the market with a disruptive high-capacity and cost-reducing integrated substructure system for deep offshore wind energy. The technology is exceptionally fitted to meet the technical and logistical challenges of the sector as it moves into deeper locations with larger turbines, while allowing for drastic cost reduction. This project will design, build, certify and fully demonstrate in operative environment a deep water substructure prototype supporting Adwen's 5MW offshore wind turbine, the be installed in the Southeast coast of Las Palmas (Canary Islands). It will become the first bottom-fixed offshore wind turbine in all of Southern Europe and the first one worldwide to be installed with no need of heavy-lift vessels. The revolutionary substructure consists in an integrated self-installing precast concrete telescopic tower and foundation that will allow for crane-free offshore installation of the complete substructure and wind turbine, thus overcoming the constraints imposed by the dependence on heavy-lift vessels. It will allow for a full inshore preassembly of the complete system, which is key to generate a highly industrialized low-cost manufacturing process with fast production rates and optimized risk control. The main benefits to be provided by this ground-breaking technology are: • Significant cost reduction (>35%) compared with current solutions. • Direct scalability in terms of turbine size, water depth, infrastructure and installation means. • Complete independence of heavy-lift vessels • Excellently suited for fast industrialized construction. • Robust and durable concrete substructure for reduced OPEX costs and improved asset integrity. • Suitable for most soil conditions, including rocky seabeds. • Enhanced environmental friendliness regarding both impact on sea life and carbon footprint.

European Commission

ELICAN

Project's Partners List

Self-installing telescopic substructure for low-cost craneless installation of complete offshore wind turbines. deep offshore 5mw prototype

Project's partners	Name	Country
1	ESTEYCO SAP	ES
2	ADWEN OFFSHORE S.L.	ES
3	ALE HEAVYLIFT (R&D) BV	NL
4	UL INTERNATIONAL GMBH	DE

FloTEc

Floating Tidal Energy Commercialisation project

At a glance

Acronym: FloTEc

Title: Floating Tidal Energy Commercialisation project

Call: H2020-LCE-2015-2

Instrument: Innovation action

Start date: 01/01/2016

End date: 30/06/2019

Duration: 42 months

Total Cost: € 13,711,731.50

EC Contribution: € 9,782,380.25

Consortium: 9 partners

Project Coordinator: SCOTRENEWABLES TIDAL POWER LIMITED, UK

Abstract

The FloTEC project will demonstrate the potential for floating tidal stream turbines to provide low-cost, high-value energy to the European grid mix. The FloTEC project has 5 core objectives: 1. Demonstrate a full-scale prototype floating tidal energy generation system for optimised energy extraction in locally varying tidal resources; 2. Reduce the Levelised Cost of Energy of floating tidal energy from current estimated €250/MWh to €200/MWh, through both CAPEX and OPEX cost reductions in Scotrenewables Tidal Technology; 3. Develop potential of tidal energy generation towards flexible, baseload generation, through the integration of energy storage. 4. Demonstrate the potential for centralised MV power conversion to provide a generic, optimised low-cost solution for tidal arrays 5. Progress tidal energy towards maturity and standard project financing by reducing cost and risk, improving reliability, and developing an advanced financing plan for first arrays. This will be realised through the construction of a M2-SR2000 2MW turbine - which will incorporate the following innovations: 50% greater energy capture through enlarged rotors with a lower rated speed; Automated steel fabrication; Centralised MV power conversion Integrated Energy Storage Mooring load dampers Composite Blade Manufacturing The SR2000-M2 will be deployed alongside the existing SR2000-M1 at EMEC to form a 4MW floating tidal array, serving as a demonstration platform for commercially viable tidal stream energy as a baseload supply.

Project's Partners List

FloTEc

Floating Tidal Energy Commercialisation project

Project's partners	Name	Country
1	SCOTRENEWABLES TIDAL POWER LIMITED	UK
2	DP Energy Ireland Limited	IE
3	HARLAND AND WOLFF HEAVY INDUSTRIES LIMITED	UK
4	EUROPEAN MARINE ENERGY CENTRE LTD	UK
5	ABB LIMITED	UK
6	EIRECOMPOSITES TEORANTA	IE
7	TECHNOLOGY FROM IDEAS LIMITED	IE
8	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
9	SKF GMBH	DE

OPERA

Open Sea Operating Experience to Reduce Wave Energy Cost

At a glance

Acronym: OPERA

Title: Open Sea Operating Experience to Reduce Wave Energy Cost

Call: H2020-LCE-2015-1-two-stage

Instrument: Research and Innovation Action

Start date: 01/02/2016

End date: 31/07/2019

Duration: 42 months

Total Cost: € 5,741,263.75

EC Contribution: € 5,741,263.75

Consortium: 12 partners

Project Coordinator: FUNDACION TECNALIA RESEARCH & INNOVATION, ES

Abstract

Europe is endowed with abundant wave energy which could cover some 10% of its electricity needs with a clean, predictable and job-creating resource, which EU companies are at the forefront exploiting with little dependence on foreign suppliers. There remain important technical challenges to bring down costs to within investors' reach, as a top priority open-sea operating experience must be analysed to permit the focus of R&D efforts on identifying and solving problems uncovered in open-sea deployments. However, to this day, most wave energy R&D does not have access to open-sea operating data as they are not shared by the companies that sponsored open-sea tests. OPERA will remove this roadblock by collecting and sharing two years of open-sea operating data of a floating oscillating water column wave energy converter. In addition the project will be the first open-sea deployment for four cost-reducing innovations that will be advanced from TRL3-4 to TRL5. Together, these four innovations have a long-term cost reduction potential of over 50%. These are: a 50% more efficient turbine, latching and predictive control, a shared mooring system for wave energy similar to those that have reduced mooring costs 50% in aquaculture, and an elastomeric mooring tether that reduces peak loads at the hull-mooring connection 70% and thus addresses one of the most pressing challenges for structural survivability of wave energy devices. Documenting and sharing this open-sea experience will also induce a step-change in our knowledge of risk and uncertainties, costs and societal and environmental impacts of wave energy. The consortium brings together world leaders in wave energy research from four European countries and the IPR owner and most advanced teams to exploit each of these innovations. Last but not least, the project brings national in-cash co-financing of over €2 million to directly fund the open-sea testing.

Project's Partners List

OPERA

Open Sea Operating Experience to Reduce Wave Energy Cost

Project's partners	Name	Country
1	FUNDACION TECNALIA RESEARCH & INNOVATION	ES
2	OCEANTEC ENERGIAS MARINAS SL	ES
3	BISCAY MARINE ENERGY PLATFORM SA	ES
4	ENTE VASCO DE LA ENERGIA	ES
5	IBERDROLA ENGINEERING AND CONSTRUCTION UK LIMITED	UK
6	Global Maritime Consultancy Ltd.	UK
7	DNV GL UK LIMITED	UK
8	THE UNIVERSITY OF EDINBURGH	UK
9	THE UNIVERSITY OF EXETER	UK
10	KYMANER-TECNOLOGIAS ENERGETICAS LDA	PT
11	INSTITUTO SUPERIOR TECNICO	PT
12	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE

PowerKite

PowerKite - Power Take-Off System for a Subsea Tidal Kite

At a glance

Acronym: PowerKite

Title: PowerKite - Power Take-Off System for a Subsea Tidal Kite

Call: H2020-LCE-2015-1-two-stage

Instrument: Research and Innovation Action

Start date: 01/01/2016

End date: 30/06/2018

Duration: 30 months

Total Cost: € 5,074,363.65

EC Contribution: € 5,074,363.65

Consortium: 9 partners

Project Coordinator: THE QUEEN'S UNIVERSITY OF BELFAST, UK

Abstract

The PowerKite project will design, build and deploy a power take-off system (PTO) for novel tidal energy collector concept, the Deep Green subsea tidal kite. The overall objective of the PowerKite project is to gather experience in open sea conditions to enhance the structural and power performance of the PTO for a next generation tidal energy converter to ensure high survivability, reliability and performance, low environmental impact and competitive cost of energy in the (future) commercial phases. The core innovation of the project resides in the electro-mechanical design of the PTO, allowing the array to be deployed in sites with low velocity currents. The project will develop full-scale components of the turbine, generator, seabed power electronics, array transformer and subsea export cable. The project will also develop a new material for the mooring system (tether) combining the required buoyancy (to avoid the seafloor and the surface) with the appropriate modulus, strength and fatigue properties (to hold an oscillating load of 200 tons). Open sea trials will play a crucial role in the project as the deployment of the first full scale Deep Green prototype (funded via separate ERDF funding) will enable extensive offshore data collection for the PTO system. The Powerkite project has the potential to double the tidal power market potential, decrease the cost of energy with up to 60% and decrease the weight per installed MW at least 20 times compared to other tidal energy converters. The project has a budget of 5.1M Euros and gathers 9 partners from 3 countries. Over 30 months, the project will progress the state of the art in several fields: PTO modelling, electrical design, mechanical design, data acquisition, analysis and optimisation.

Project's Partners List

PowerKite

PowerKite - Power Take-Off System for a Subsea Tidal Kite

Project's partners	Name	Country
1	THE QUEEN'S UNIVERSITY OF BELFAST	UK
2	MIDROC PROJECT MANAGEMENT AB	SE
3	BELGISCH LABORATORIUM VAN DE ELEKTRICITEITSINDUSTRIE	BE
4	MINESTO AB	SE
5	CHALMERS TEKNISKA HOEGSKOLA AB	SE
6	SSPA SWEDEN AB.	SE
7	APPLIED COMPUTING & ENGINEERING LIMITED	UK
8	UW-ELAST AB	SE
9	MOORLINK SOLUTIONS AB	SE

TELWIND

Integrated telescopic tower and evolved spar floating substructure for low-cost deep offshore wind and next generation of 10mw+ turbines

At a glance

Acronym: TELWIND

Title: Integrated telescopic tower and evolved spar floating substructure for low-cost deep offshore wind and next generation of 10mw+ turbines

Call: H2020-LCE-2015-1-two-stage

Instrument: Research and Innovation Action

Start date: 01/12/2015

End date: 31/05/2018

Duration: 30 months

Total Cost: € 3,498,530.00

EC Contribution: € 3,498,530.00

Consortium: 8 partners

Project Coordinator: ESTEYCO SAP, ES

Abstract

TELWIND unites a strong complimentary team of renowned European companies and research institutions, which join forces to develop a revolutionary integrated floating offshore system. The concept, which has already undergone trial tank testing with overly positive results, shall enable a radical cost reduction both in terms of material usage and required means and operations. The system has been conceived in a holistic approach to the overall substructure, tower and turbine, generating ground breaking synergies between the integrated elements to specifically address the particular requirements of offshore wind, focusing in the capacity for low-cost industrialization in the inshore construction and offshore installation processes. The Telwind concept integrates a novel floating substructure and a pioneer self-erecting telescopic tower. The former provides all the performance advantages of a spar-buoy substructure while allowing for qualitatively lower material usage, the latter enables a full onshore preassembly of the overall system and a highly beneficial reduction of offshore works and auxiliary means. Together they overcome the limitations imposed by the available inshore infrastructure and offshore heavylift vessels, and thus generate a fully scalable system, perfectly fitted for the effective integration of the next generation of extremely large (10MW+) offshore wind turbines which are key to enhance the reduction of the Levelised Cost of Energy (LCOE). The system will also profit from the proven structural efficiency and economy of precast concrete, a material particularly well suited for low-cost industrialized production of repetitive units. Robust, reliable and virtually maintenance-free marine constructions result, reducing OPEX costs, greatly increasing durability and fatigue tolerance, and setting the ground for extended service life of the infrastructure, which could further magnify the system's capacity for drastic reduction of the LCOE.

TELWIND

Project's Partners List

Integrated telescopic tower and evolved spar floating substructure for low-cost deep offshore wind and next generation of 10mw+ turbines

Project's partners	Name	Country
1	ESTEYCO SAP	ES
2	ALE HEAVYLIFT (R&D) BV	NL
3	MECAL WIND TURBINE DESIGN BV	NL
4	UNIVERSIDAD DE CANTABRIA	ES
5	CENTRO DE ESTUDIOS Y EXPERIMENTACION DE OBRAS PUBLICAS - CEDEX	ES
6	COBRA INSTALACIONES Y SERVICIOS S.A	ES
7	DYWIDAG SYSTEMS INTERNATIONAL GMGH	DE
8	TECHNISCHE UNIVERSITAET MUENCHEN	DE


European
Commission

2015

Societal Challenge 4: Smart, Green and Integrated Transport

Call - 'MOBILITY FOR GROWTH'

At a glance

Acronym: HOLISHIP

Title: HOLIstic optimisation of SHIP design and operation for life cycle

Call: H2020-MG-2015_TwoStages

Instrument: Research and innovation action

Start date: 01/09/2016

End date: 31/08/2020

Duration: 48 months

Total Cost: € 11,431,746.00

EC Contribution: € 11,431,746.00

Consortium: 39 partners

Project Coordinator: HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH, DE

HOLISHIP

HOLIstic optimisation of SHIP design and operation for life cycle

Abstract

Most maritime products are typically associated with large investments and are seldom built in large series. Where other modes of transport benefit from the economy of series production, this is not the case for maritime products which are typically designed to refined customer requirements increasingly determined by the need for high efficiency, flexibility and low environmental impact at a competitive price. Product design is thus subject to global trade-offs among traditional constraints (customer needs, technical requirements, cost) and new requirements (life-cycle, environmental impact, rules). One of the most important design objectives is to minimise total cost over the economic life cycle of the product, taking into account maintenance, refitting, renewal, manning, recycling, environmental footprint, etc. The trade-off among all these requirements must be assessed and evaluated in the first steps of the design process on the basis of customer / owner specifications. Advanced product design needs to adapt to profound, sometimes contradicting requirements and assure a flexible and optimised performance over the entire life-cycle for varying operational conditions. This calls for greatly improved design tools including multi-objective optimisation and finally virtual testing of the overall design and its components. HOLISHIP (HOLIstic optimisation of SHIP design and operation for life-cycle) addresses these urgent industry needs by the development of innovative design methodologies, integrating design requirements (technical constraints, performance indicators, life-cycle cost, environmental impact) at an early design stage and for the entire life-cycle in an integrated design environment. Design integration will be implemented in practice by the development of integrated design s/w platforms and demonstrated by digital mock-ups and industry led application studies on the design and performance of ships, marine equipment and maritime assets in general.

Project's Partners List

HOLISHIP

HOLIstic optimisation of SHIP design and operation for life cycle

Project's partners	Name	Country
1	HAMBURGISCHE SCHIFFBAU-VERSUCHSANSTALT GMBH	DE
2	ALS MARINE CONSULTANTS LTD	CY
3	AVEVA GMBH	DE
4	BALance Technology Consulting GMBH	DE
5	BUREAU VERITAS REGISTRE INTERNATIONAL DE CLASSIFICATION DE NAVIRES ETD'AERONEFS SA	FR
6	CETENA S.p.A. Centro per gli Studi di Tecnica Navale	IT
7	CENTER OF MARITIME TECHNOLOGIES EV	DE
8	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
9	SCHEEPSWERF DAMEN GORINCHEM BV	NL
10	DANAOS SHIPPING COMPANY LIMITED	CY
11	DCNS SA	FR
12	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DE
13	DET NORSKE VERITAS CLASSIFICATION AND CERTIFICATION SERVICES SA	EL
14	ELOMATIC OY	FI
15	EPSILON MALTA LIMITED	MT
16	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	DE
17	FINCANTIERI SPA	IT
18	FRIENDSHIP SYSTEMS AG	DE
19	Hochschule Bremen	DE
20	INSTITUT DE RECHERCHE TECHNOLOGIQUE SYSTEMX	FR
21	INSTITUT FUER SEEVERKEHRSWIRTSCHAFT UND LOGISTIK	DE
22	LLOYD'S REGISTER EMEA IPS	UK
23	STICHTING MARITIEM RESEARCH INSTITUUT NEDERLAND	NL
24	NORSK MARINTEKNISK FORSKNINGSINSTITUTT AS	NO
25	MEYER WERFT PAPENBURG GMBH & CO KG	DE
26	NAVANTIA S.A.	ES
27	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	EL
28	ROLLS-ROYCE MARINE AS	NO
29	ROLLS-ROYCE POWER ENGINEERING PLC	UK
30	SOCIETE D'INGENIERIE DE RECHERCHESET D'ETUDES EN HYDRODYNAMIQUE NAVALE	FR

European Commission

Project's Partners List

HOLISHIP

HOLIstic optimisation of SHIP design and operation for life cycle

Project's partners	Name	Country
31	S.M.I.L.E.-FEM GmbH	DE
32	STARBULK SA	LR
33	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
34	TRITEC MARINE LTD	UK
35	ULJANIK BRODOGRADNJA STROJOGRADNJAELEKTROINDUSTRIJA OPREMA PLOVIDBA TRGOVINA TURIZAM DD	HR
36	UNIVERSITA DEGLI STUDI DI GENOVA	IT
37	UNIVERSITE DE LIEGE	BE
38	UNIVERSITY OF STRATHCLYDE	UK
39	VAN DER VELDEN MARINE SYSTEMS BV	NL

SHIPLYS

Ship Lifecycle Software Solutions

At a glance

Acronym: SHIPLYS

Title: Ship Lifecycle Software Solutions

Call: H2020-MG-2015_TwoStages

Instrument: Research and innovation Action

Start date: 01/09/2016

End date: 31/08/2019

Duration: 36 months

Total Cost: € 6,144,150.00

EC Contribution: € 6,144,150.00

Consortium: 12 partners

Project Coordinator: TWI LIMITED, UK

Abstract

SHIPLYS has been specified as necessary by our architect, shipbuilder and shipowner members, who, in order to survive in the world market, need to improve their capability to reduce the cycle time and costs of design and production, to be able to reliably produce better ship concepts through virtual prototyping and to meet the increasing requirements for LCCA (Life Cycle Cost Analysis), environmental assessments, risk assessments and end-of-life considerations as differentiators. Yet, the calculation and modeling to do this is difficult and time consuming, especially for SMEs without a large overhead of trained staff and tools, due to difficulties in integrating data between incompatible tools and formats for different design stages: conceptual hull design; the finite element calculations feeding preliminary and detailed designs; and virtual prototyping simulation models. This is coupled with the lack of an industry specific lifecycle modeling technique, hindered by the lack of information to support reliable decision-making. SHIPLYS aims to transfer experience from the development of industry modeling coherence schemes e.g. BIM (Building Information Modelling), and use them to produce new techniques for quick, reliable multi-disciplinary modeling capability for the marine industry: - Develop standardization aspects of the new paradigm by transferring the key BIM Product Model principles: identify and capture the useful implicit information in existing CAD/CAE data and develop data formats to provide persistence for data reuse between design stages - Develop a Virtual Prototyping system to incorporate LCCA, environmental and risk assessment criteria, for fast and cost effective evaluation of alternatives - Add multi-criterion decision analysis techniques to support decision making across the short/ long term, based on explicit formulation matrix of 'Buyer Utility;' the key purchasing decision criteria - To build on ISO10303 standards for interoperable data reuse.

Project's Partners List

SHIPLYS

Ship Lifecycle Software Solutions

Project's partners	Name	Country
1	TWI LIMITED	UK
2	FUNDACION CENTRO TECNOLOGICO SOERMAR	ES
3	ATLANTEC ENTERPRISE SOLUTIONS GMBH	DE
4	UNIVERSITY OF STRATHCLYDE	UK
5	ASTILLEROS DE SANTANDER SA	ES
6	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	EL
7	INSTITUTO SUPERIOR TECNICO	PT
8	VARNA MARITIME	BG
9	FERGUSON MARINE ENGINEERING LTD	UK
10	Alveus l.l.c.	HR
11	BMT GROUP LTD	UK
12	LLOYD'S REGISTER EMEA IPS	UK

2015

Societal Challenge 5: Climate Action, Environment, Resource Efficiency and Raw Materials

Call – Growing a Low Carbon, Resource Efficient Economy with a Sustainable Supply of Raw Materials

BLUE NODULES

Breakthrough Solutions for the Sustainable Harvesting and Processing of Deep Sea Polymetallic Nodules

At a glance

Acronym: BLUE NODULES

Title: " Breakthrough Solutions for the Sustainable Harvesting and Processing of Deep Sea Polymetallic Nodules"

Call: H2020-SC5-2015-one-stage

Instrument: Research and innovation Action

Start date: 01/02/2016

End date: 31/01/2020

Duration: 48 months

Total Cost: € 7,991,137.50

EC Contribution: € 7,991,137.50

Consortium: 14 partners

Project Coordinator: IHC MINING BV, NL

Abstract

A key EU policy aims to reduce the Union dependency on raw materials imports, in particular (candidate) Critical Raw Materials that are vital for the EU innovative technologies. Topic SC5-11c-2015 scope focuses on “developing new highly-automated technological sustainable solutions for deep mining … in the sea bed combined with in-situ processing of minerals”. An existing but challenging raw material resource concerns polymetallic nodules. These round to elongated concretions of 1–15 cm diameter form on sediment-covered deep-sea plains in all oceans between 4-6000m water depth. The challenge to harvest and transport the nodules to the EU shore is taken on by Blue Nodules. The governing project principle is: industrial viability within the context of a realistic and technical, economic and environmentally balanced business case for the complete Polymetallic Nodules value chain of mining, processing and valorisation. Blue Nodules will develop and test to TRL6 maturity a new highly-automated and technologically sustainable deep sea mining system. Key features are: an annual production capability of 2 Million Tons nodules in water depths up to 6000m, in-situ processing of the nodules and intrinsic safe working conditions. Technical WPs are dedicated to subsea harvesting equipment & control technology, in-situ seafloor processing of polymetallic nodules and sea surface, land operations & processes. A dedicated WP focuses on environmental issues and on an Environmental Impact Assessment (EIA). A WP setting requirements and assessing the developed technology controls the entire work plan structure. High credibility is obtained by linking the project work to a nodule field licence owned by a project partner and located in the most promising known nodule deposit: the Clarion Clipperton Zone. The project consortium contains 14 leading industry and research partners from 9 EU member states. The project duration is 48 months, the required funding amounts to 8 Million.

Project's Partners List

BLUE NODULES

Breakthrough Solutions for the Sustainable Harvesting and Processing of Deep Sea Polymetallic Nodules

Project's partners	Name	Country
1	IHC MINING BV	NL
2	DREDGING INTERNATIONAL NV	BE
3	CONTITECH RUBBER INDUSTRIAL KORLATOLT FELELOSSEGU TARSASAG	HU
4	IHC MTI BV	NL
5	DE REGT MARINE CABLES BV	NL
6	UNIRESEARCH BV	NL
7	SEASCAPE CONSULTANTS LTD	UK
8	GLOBAL SEA MINERAL RESOURCES	BE
9	BUREAU VERITAS REGISTRE INTERNATIONAL DE CLASSIFICATION DE NAVIRES ETD'AERONEFS SA	FR
10	STICHTING NIOZ, KONINKLIJK NEDERLANDS INSTITUUT VOOR ONDERZOEK DER ZEE	NL
11	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	DE
12	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	NO
13	AARHUS UNIVERSITET	DK
14	UNIVERSITAT POLITECNICA DE CATALUNYA	ES

MERCES

Marine Ecosystem Restoration in Changing European Seas

Abstract

The project MERCES is focused on the restoration of different degraded marine habitats, with the aim of: 1) assessing the potential of different technologies and approaches; 2) quantifying the returns in terms of ecosystems services and their socio-economic impacts; 3) defining the legal-policy and governance frameworks needed to optimize the effectiveness of the different restoration approaches. Specific aims include: a) improving existing, and developing new, restoration actions of degraded marine habitats; b) increasing the adaptation of EU degraded marine habitats to global change; c) enhancing marine ecosystem resilience and services; d) conducting cost-benefit analyses for marine restoration measures; e) creating new industrial targets and opportunities. To achieve these objectives MERCES created a multi-disciplinary consortium with skills in marine ecology, restoration, law, policy and governance, socio-economics, knowledge transfer, dissemination and communication. MERCES will start from the inventory of EU degraded marine habitats (WP1), conduct pilot restoration experiments (WP2, WP3, WP4), assess the effects of restoration on ecosystem services (WP5). The legal, policy and governance outputs will make effective the potential of marine restoration (WP6) and one dedicated WP will assess the socio-economic returns of marine ecosystems' restoration (WP7). The transfer of knowledge and the links with the industrial stakeholders will be the focus of WP8. The results of MERCES will be disseminated to the widest audience (WP9). The project will be managed through a dedicated management office (WP10). MERCES will contribute to the Blue Growth by: i) improving the EU scientific knowledge on marine restoration, ii) contributing to EU Marine Directives; iii) implementing the Restoration Agenda, iv) enhancing the industrial capacity in this field, v) increasing the competitiveness of EU in the world market of restoration, and vi) offering new employment opportunities.

At a glance

Acronym: MERCES

Title: Marine Ecosystem Restoration in Changing European Seas

Call: H2020-SC5-2015-two-stage

Instrument: Research and innovation Action

Start date: 01/06/2016

End date: 31/05/2020

Duration: 48 months

Total Cost: € 6,651,118.20

EC Contribution: € 6,651,118.20

Consortium: 28 partners

Project Coordinator: UNIVERSITA POLITECNICA DELLE MARCHE, IT

Project's Partners List

MERCES

Marine Ecosystem Restoration in Changing European Seas

Project's partners	Name	Country
1	UNIVERSITA POLITECNICA DELLE MARCHEUNIVERSITA POLITECNICA DELLE MARCHE	IT
2	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
3	HELLENIC CENTRE FOR MARINE RESEARCH	EL
4	IMAR- INSTITUTO DO MAR	PT
5	ALFRED-WEGENER-INSTITUT HELMHOLTZ- ZENTRUM FUER POLAR- UND MEERESFORSCHUNG	DE
6	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
7	NATIONAL UNIVERSITY OF IRELAND, GALWAY	IE
8	WAGENINGEN UNIVERSITY	NL
9	AALBORG UNIVERSITET	DK
10	ABO AKADEMI	FI
11	TARTU ULIKOOL	EE
12	FACULTY OF SCIENCE UNIVERSITY OF ZAGREB	HR
13	CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE	IT
14	STICHTING NIOZ, KONINKLIJK NEDERLANDS INSTITUUT VOOR ONDERZOEK DER ZEE	NL
15	ECOPATH INTERNATIONAL INITIATIVE ASOCIACION	ES
16	STICHTING KATHOLIEKE UNIVERSITEIT	NL
17	NORSK INSTITUTT FOR VANNFORSKNING	NO
18	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
19	ECOREACH SRL	IT
20	Median SCP	ES
21	STUDIO ASSOCIATO GAIA SNC DEI DOTTORI ANTONIO SARA E MARTINA MILANESE	IT
22	DEEP SEAS ENVIRONMENTAL SOLUTIONS LTD	UK
23	Marine Law and Ocean Policy Research Services Ltd	IE
24	WWF ITALIA	IT
25	WCMC LBG	UK
26	AKDENIZ KORUMA DERNEGI	TR
27	UNIVERSITAT DE BARCELONA	ES
28	HERIOT-WATT UNIVERSITY	UK

ROBUST

Robotic subsea exploration technologies

At a glance

Acronym: ROBUST

Title: Robotic subsea exploration technologies

Call: H2020-SC5-2015-one-stage

Instrument: Research and innovation Action

Start date: 01/12/2015

End date: 31/01/2020

Duration: 50 months

Total Cost: € 5,986,722.50

EC Contribution: € 5,986,722.50

Consortium: 9 partners

Project Coordinator: TWI LIMITED, UK

Abstract

There is a need to develop an autonomous, reliable, cost effective technology to map vast terrains, in terms of mineral and raw material contents which will aid in reducing the cost of mineral exploration, currently performed by ROVs and dedicated SSVs and crew. Furthermore there is a need to identify, in an efficient and non-intrusive manner (minimum impact to the environment), the most rich mineral sites. This technology will aid the seabed mining industry, reduce the cost of exploration and especially the detailed identification of the raw materials contained in a mining sites and enable targeted mining only of the richest resources existing. The ROBUST proposal aims to tackle the aforementioned issue by developing sea bed in situ material identification through the fusion of two technologies, namely laser-based in-situ element-analyzing capability merged with underwater AUV (Autonomous Underwater Vehicle) technologies for sea bed 3D mapping. This will enable resource identification done by robotic control enabled by the synergy between AUV hovering and manipulator capabilities. The underwater robotic laser process is the Laser Induced Breakdown Spectroscopy (LIBS), used for identification of materials on the sea bed. The AUV Robotic vehicle will dive, identify the resources that are targeted for LIBS scanning through 3D real time mapping of the terrain (hydro-acoustically, laser scanners, photogrammetry) and position the LIBS in the required locations of mineral deposits on the ocean floor to autonomously perform qualitative and quantitative analyses.

Project's Partners List

ROBUST

Robotic subsea exploration technologies

Project's partners	Name	Country
1	TWI LIMITED	UK
2	CGGVERITAS SERVICES SA	FR
3	ALS MARINE CONSULTANTS LTD	CY
4	LZH LASER ZENTRUM HANNOVER E.V.	DE
5	HELMHOLTZ ZENTRUM FUR OZEANFORSCHUNG KIEL	DE
6	GRAAL TECH SRL	IT
7	NEOLASE GMBH	DE
8	UNIVERSITA DEGLI STUDI DI GENOVA	IT
9	CORONIS COMPUTING SL	ES


European
Commission

2015

Excellent Science: EUROPEAN RESEARCH COUNCIL (ERC)

Call - ERC Consolidator Grant

Timed

Testing the role of Mediterranean thermohaline circulation as a sensor of transient climate events and shaker of North Atlantic Circulation

Abstract

The Mediterranean Sea is an excellent sensor of transient climate conditions at different time scales. Changes in Mediterranean water properties result from complex interactions between the Atlantic inflow, local climate and north and south atmospheric teleconnections. In turn, Mediterranean outflow waters spill into the Atlantic Ocean, thus acting as a net salt and heat source for the Atlantic Meridional Overturning Circulation (AMOC). Climate models anticipate changes in these circulation systems within decades; thus it becomes critical to understand the natural range of variations in the Mediterranean Thermohaline Circulation (MedTHC) and whether these can alter the AMOC. An innovative approach, based on both well-established and newly-developed analytical methods will be applied to characterize, qualitatively and quantitatively, past changes in the MedTHC dynamics. Specific time windows representing very different transient periods (18-14 ka BP; 9.5-6.5 ka BP and the last 2 kyr) will be targeted in order to understand the distinctive role that individual forcing mechanisms exerted in controlling MedTHC changes. Particular emphasis will be placed on building robust regional chronologies and proxy records with unprecedented high-resolution. This approach will combine proxy data from sediment cores and deep-sea corals along the main paths of water masses as they cross the Mediterranean basins and exit into the North Atlantic. This paleo-data analysis will be complemented with novel climate model paleo-simulations to test the sensitivity of the AMOC to changes in Mediterranean outflow under varying AMOC conditions. The main goals are to identify: (1) The natural range of MedTHC variability; (2) The forcings and inter-regional teleconnections driving MedTHC changes; (3) The associated impact onto the AMOC. The assessment of the forcings controlling MedTHC and the ensuing impact on the AMOC will allow us to gauge the consequences of future Mediterranean changes.

At a glance

Acronym: Timed

Title: Testing the role of Mediterranean thermohaline circulation as a sensor of transient climate events and shaker of North Atlantic Circulation

Call: ERC-2015-CoG

Instrument: ERC-COG - Consolidator Grant

Start date: 01/01/2017

End date: 31/12/2021

Duration: 60 months

Total Cost: € 2,400,000.00

EC Contribution: € 2,400,000.00

Consortium: 2 partners

Project Coordinator: UNIVERSITAT DE BARCELONA, ES

Project's Partners List

Timed

Testing the role of Mediterranean thermohaline circulation as a sensor of transient climate events and shaker of North Atlantic Circulation

Project's partners	Name	Country
1	UNIVERSITAT DE BARCELONA	ES
2	CONSIGLIO NAZIONALE DELLE RICERCHE	IT


European
Commission

2015

Excellent Science: MARIE-SKŁODOWSKA-CURIE ACTIONS

Call for Marie Skłodowska-Curie Innovative Training Networks (ITN)

At a glance

Acronym: ARCADES

Title: "Algebraic Representations in Computer-Aided Design for complEx Shapes"

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-ETN

Start date: 01/01/2016

End date: 31/12/2019

Duration: 48 months

Total Cost: € 3,408,202.08

EC Contribution: € 3,408,202.08

Consortium: 8 partners

Project Coordinator: ATHENA RESEARCH AND INNOVATION CENTER IN INFORMATION COMMUNICATION & KNOWLEDGE TECHNOLOGIES, EL

ARCADES

Algebraic Representations in Computer-Aided Design for complEx Shapes

Abstract

ARCADES aims at disrupting the traditional paradigm in Computer-Aided Design (CAD) by exploiting cutting-edge research in mathematics and algorithm design. Geometry is now a critical tool in a large number of key applications; somewhat surprisingly, however, several approaches of the CAD industry are outdated, and 3D geometry processing is becoming increasingly the weak link. This is alarming in sectors where CAD faces new challenges arising from fast point acquisition, big data, and mobile computing, but also in robotics, simulation, animation, fabrication and manufacturing where CAD strives to address crucial societal and market needs. The challenge taken up by ARCADES is to invert the trend of CAD industry lagging behind mathematical breakthroughs and to build the next generation of CAD software based on strong foundations from algebraic geometry, differential geometry, scientific computing, and algorithm design. Our game-changing methods lead to real-time modelers for architectural geometry and visualisation, to isogeometric and design-through-analysis software for shape optimisation, and marine design & hydrodynamics, and to tools for motion design, robot kinematics, path planning, and control of machining tools. One of the Network SMEs estimates that the innovative impact of ARCADES may enable them to get ahead of competition for up to 2 years, thus benefiting about 40% of their customers. The participants span a multidisciplinary and multisectoral spectrum for realising our vision, all being international leaders at various stages of the pipeline. They form an outstanding ecosystem for training the next generation of applied mathematicians, computer scientists and engineers for achieving our scientific breakthroughs, and who are equipped with a double career advantage: excellent research training, and exposure to industrial research environments through a nexus of secondments among Universities, Research and Innovation Centers, and industrial teams.

ARCADES

Project's Partners List

Algebraic Representations in Computer-Aided Design for complEx Shapes

Project's partners	Name	Country
1	ATHENA RESEARCH AND INNOVATION CENTER IN INFORMATION COMMUNICATION & KNOWLEDGE TECHNOLOGIES	EL
2	UNIVERSITAT DE BARCELONA	ES
3	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE	FR
4	UNIVERSITAT LINZ	AT
5	STIFTELSEN SINTEF	NO
6	UNIVERSITY OF STRATHCLYDE	UK
7	TECHNISCHE UNIVERSITAET WIEN	AT
8	Evolute GmbH	AT

ICONN

European Industrial DoCtorate on Offshore WiNd and Wave Energy

At a glance

Acronym: ICONN

Title: European Industrial DoCtorate on Offshore WiNd and Wave ENergy

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-EID

Start date: 01/10/2015

End date: 30/09/2019

Duration: 48 months

Total Cost: € 845,838.36

EC Contribution: € 845,838.36

Consortium: 3 partners

Project Coordinator: THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN, IE

Abstract

ICONN is a unique European Industrial Doctorate initiative to meet the current and future demand for highly skilled offshore wind and wave energy engineers by developing and advancing European capacity in the design, development and performance optimisation for Offshore Wind and Wave Energy installations. The initiative is strongly shaped by active participation from industries, and will develop and enhance European capacity in the offshore renewable energy area at a critical juncture in time when Europe strives to occupy a lead market position globally in this sector. The ICONN EID will i) provide state-of-the art training to Early Stage Researchers jointly with industries in the scientific and engineering disciplines of power take-off (PTO) and structural control, wave mechanics and hydrodynamics, CFD, sensing and system identification; ii) advance expertise, and research capacity, in the techno-economic-environmental factors that impact on the reliability and operational efficiency of offshore renewable energy installations; iii) instil business, management, entrepreneurship and innovation skills pertaining to offshore wind and combined wind-wave energy sector to encourage entrepreneurship and innovation; iv) promote clearly defined scientific dissemination, public outreach and commercialisation/IP agendas. The three scientific work packages, which scaffold the individual research activities, progress from addressing specific challenges and capability deficiencies that impede the effective and efficient deployment of offshore wind and wave infrastructures (floating systems and optimisation of power take-off (PTO)) through to activities that seek to create, and innovate in, new control algorithms and in operational efficiency domain (fatigue control, new algorithms for control of PTO).

Project's Partners List

ICONN

European Industrial DoCtorate on Offshore WiNd and Wave Energy

Project's partners	Name	Country
1	THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN	IE
2	AALBORG UNIVERSITET	DK
3	FLOATING POWER PLANT A/S	DK

At a glance

Acronym: INNOWAVE

Title: Maximising the technical and economic performance of real wave energy devices

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-EID

Start date: 01/03/2016

End date: 29/02/2020

Duration: 48 months

Total Cost: € 804,637.08

EC Contribution: € 804,637.08

Consortium: 2 partners

Project Coordinator: NATIONAL UNIVERSITY OF IRELAND MAYNOOTH, IE

INNOWAVE

Maximising the technical and economic performance of real wave energy devices

Abstract

This initiative proposes an innovative training environment for 3 ESRs in a supportive environment provided by an award-winning progressive wave energy company (Aquamarine Power Ltd) and a research centre at the forefront of innovation in wave energy device optimisation and control (the Centre for Ocean Energy Research at NUIM). The ESRs will be recruited by COER and will be seconded for 50% of their time to APL. There is a clear need for a training programme that integrates academic and industrial contributions. The proposed programme integrates formal and informal training activities with a rich set of industry-academic research projects, supported by significant secondment to the industrial partner and experience with real-world tank and ocean testing, wave-energy device deployment and implementation of new research results in state-of-the-art wave energy technology. The ESRs will be enrolled in a Structured PhD programme at NUIM, and will benefit from a series of structured training models. The training programme is complemented by a set of network-wide training activities. The research programme is composed of 3 closely-knit projects in the research area of wave energy and ocean energy, which allow the ESRs to have significant interaction, yet providing each ESR with an independent set of objectives and the opportunity to play a significant role in the rapidly developing area of wave energy conversion. With a clear global requirement to provide new energy sources, this programme aims to contribute to both the rapid commercialisation of a viable and economic wave energy technology, while also providing a pipeline of well-trained engineers with research, technical and commercial skills which are badly needed by this rapidly-expanding industrial sector.

European Commission

INNOWAVE

Project's Partners List

Maximising the technical and economic performance of real wave energy devices

Project's partners	Name	Country
1	NATIONAL UNIVERSITY OF IRELAND MAYNOOTH	IE
2	AQUAMARINE POWER LIMITED	UK

MARmaED

MARine MAnagement and Ecosystem Dynamics under climate change

At a glance

Acronym: MARmaED

Title: MARine MAnagement and Ecosystem Dynamics under climate change

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-ETN

Start date: 01/10/2015

End date: 30/09/2019

Duration: 48 months

Total Cost: € 4,073,903.28

EC Contribution: € 4,073,903.28

Consortium: 8 partners

Project Coordinator: UNIVERSITETET I OSLO, NO

Abstract

The proposed European Training Network, MARmaED, connects science, policy and people and transcends national borders, disciplinary barriers and sectorial divides. By building a greater knowledge base and train the next generation of scientists to think across disciplines, MARmaED contributes to reinforce Europe's position as a global leader in marine science and ensure blue growth and sustainable exploitation of marine living resources. The objectives of MARmaED are: - To increase the marine scientific knowledge base by integrating traditionally separate scientific disciplines within a unified learning platform. - To train a new generation of innovative researchers with interdisciplinary experience and skilled in promoting marine science to a wide audience. MARmaED integrates education and research in complementary marine sciences in Norway, Finland, Denmark, the Netherlands, Germany and France. Specifically, the network links state-of-the-art competences in genetics, ecophysiology, ecology, climatology, physical oceanography, statistics and economics. By so doing, the network unifies essential disciplines needed to achieve a good understanding and management of the marine environment. The research will provide new insights into how the cumulative stress from biodiversity loss, climate change and harvesting affects Europe's complex marine systems and the consequences for optimal resource use - knowledge that is needed for sustainable, ecosystem-based management. MARmaED has a strong focus on training, with a mobility programme facilitating inter-disciplinarity and training modules of transferrable skills such as communication. Targeted secondments in the non-academic sector will provide the network's students with inter-sectorial training and favourable employment opportunities. MARmaED will thus create novel standards in the training of a new generation of multi-disciplinarily skilled and creative marine scientists, fit to address Europe's future challenges.

Project's Partners List

MARmaED

MARine MAnagement and Ecosystem Dynamics under climate change

Project's partners	Name	Country
1	UNIVERSITETET I OSLO	NO
2	HELSINGIN YLIOPISTO	FI
3	DANMARKS TEKNISKE UNIVERSITET	DK
4	ABO AKADEMI	FI
5	UNIVERSITAET HAMBURG	DE
6	METEO-FRANCE	FR
7	UNIVERSITETET I BERGEN	NO
8	WAGENINGEN UNIVERSITY	NL

At a glance

Acronym: MicroArctic

Title: Microorganisms in Warming Arctic Environments

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-ETN

Start date: 01/04/2016

End date: 31/03/2020

Duration: 48 months

Total Cost: € 3,897,006.48

EC Contribution: € 3,897,006.48

Consortium: 13 partners

Project Coordinator: UNIVERSITY OF BRISTOL, PT

MicroArctic

Microorganisms in Warming Arctic Environments

Abstract

The Arctic plays a key role in the Earth's climate system and is an area of growing strategic importance for European policy. In this ETN, we will train the next generation of Arctic microbiology and biogeochemistry experts who, through their unique understanding of the Arctic environment and the factors that impact ecosystem and organism response to the warming Arctic, will be able to respond to the need for leadership from public, policy and commercial interests. The training and research programme of MicroArctic is made up of seven interlinked Work Packages (WP). WP1 to WP4 are research work packages at the cutting edge of Arctic microbiology and biogeochemistry and these will be supported by three overarching WPs (WP5-7) associated with the management, training and dissemination of results. WP1 will deliver information about the role of external inputs (e.g., atmospheric) of nutrients and microorganism that drive biogeochemical processes in relation to annual variation in Arctic microbial activity and biogeochemical processes. WP2 will explore ecosystem response on time scales of 100s of years to these inputs using a chrnosequence approach in the already changing Arctic. The effect of time and season and the warming of the Arctic on ecosystem functioning and natural resources will be quantified through geochemical analyses and next generation multi-omics approaches. Complementing WP1 and WP2, WP3 will focus on organism response and adaptation using a range of biochemical, molecular, experimental and culturing approaches. WP4 will address specific applied issues such as colonisation by pathogenic organisms and biotechnological exploitation of Arctic ecosystems. MicroArctic will bring together interdisciplinary experts from both the academic and non-academic sectors across Europe into a network of 20 Institutions across 11 countries.

European Commission

MicroArctic

Project's Partners List

Microorganisms in Warming Arctic Environments

Project's partners	Name	Country
1	CENTRO DE CIENCIAS DO MAR DO ALGARVE	PT
2	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6	FR
3	STAZIONE ZOOLOGICA ANTON DOHRN	IT
4	MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM	UK
5	UNIVERSITEIT GENT	BE
6	HELLENIC CENTRE FOR MARINE RESEARCH	EL
7	THE HEBREW UNIVERSITY OF JERUSALEM	IL
8	UNIVERSIDAD DEL PAIS VASCO/ EUSKAL HERRIKO UNIBERTSITATEA	ES
9	UNIVERSITETET I BERGEN	NO
10	IMAR- INSTITUTO DO MAR	PT
11	UNIVERSIDAD DE VIGO	ES
12	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK
13	VLAAMS INSTITUUT VOOR DE ZEE VZW	BE

PANDORA

Probing safety of nano-objects by defining immune responses of environmental organisms

At a glance

Acronym: PANDORA

Title: Probing safety of nano-objects by defining immune responses of environmental organisms

Call: H2020-MSCA-ITN-2015

Instrument: MSCA-ITN-ETN

Start date: 01/01/2016

End date: 31/12/2019

Duration: 48 months

Total Cost: € 2,814,491.16

EC Contribution: € 2,814,491.16

Consortium: 10 partners

Project Coordinator: CONSIGLIO NAZIONALE DELLE RICERCHE, IT

Abstract

"PANDORA (Probing safety of nano-objects by defining immune responses of environmental organisms) shall assess the global impact of engineered nanoparticles (NP) on the immune responses of representative organisms covering all evolutionary stages and hierarchical levels from plants to invertebrates and vertebrates. Immunity is a major determinant of the survival and fitness of all living organisms, therefore immunosafety of engineered NP is a key element of environmental nanosafety. PANDORA will tackle the issue of global immunological nanosafety by comparing the impact of widely-used NP (e.g., iron, titanium and cerium oxide) on the human immune response with their effects in representative terrestrial and marine organisms. This comparison will focus on the conserved system of innate immunity/stress response/inflammation, aiming to identify common mechanisms and markers across immune defence evolution shared by plants (Arabidopsis), invertebrate (bivalves, echinoderms, earthworms), and vertebrate (human) species. PANDORA's objectives are: 1. To identify immunological mechanisms triggered by nano-objects, and predictive markers of risk vs. safety; 2. To do so by a collaborative cross-species comparison, from plants to human, of innate immune defence capacity, using selected, industrially-relevant NP; 3. To design predictive in vitro assays to measure the immuno-risk of NP to the environment and human health, as new approaches to industrial and environmental nanosafety testing. PANDORA will train 11 PhD students in an overarching training programme involving training-by-research, joint courses of technical, scientific and transferrable skills, participation to public scientific events, and an intense intersectoral networking exchange plan. The PANDORA consortium encompasses academic institutions, research centres, and SMEs, all with proven experience in higher education and training, and state-of-the art scientific and technical expertise and infrastructures."

Project's Partners List

PANDORA

Probing safety of nano-objects by defining immune responses of environmental organisms

Project's partners	Name	Country
1	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
2	PARIS-LODRON-UNIVERSITAT SALZBURG	AT
3	UNIVERSITA DEGLI STUDI DI GENOVA	IT
4	MIKROBIOLOGICKY USTAV - AVCR, V.V.I.	CZ
5	EBERHARD KARLS UNIVERSITAET TUEBINGEN	DE
6	UNIVERZA V LJUBLJANI	SI
7	CARDIFF UNIVERSITY	UK
8	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
9	AvantiCell Science Ltd	UK
10	FUNDACIO INSTITUT CATALA DE NANOCIENCIA I NANOTECNOLOGIA	ES


European
Commission

2015

Excellent Science: European Research Infrastructures

Call - Developing new world-class research infrastructures

ECCSEL

European Carbon Dioxide Capture and Storage Laboratory Infrastructure

At a glance

Acronym: ECCSEL

Title: European Carbon Dioxide Capture and Storage Laboratory Infrastructure

Call: H2020-INFRADEV-1-2015-1

Instrument: Research and innovation action

Start date: 01/09/2015

End date: 31/08/2017

Duration: 24 months

Total Cost: € 3,252,279.60

EC Contribution: € 3,252,279.00

Consortium: 14 partners

Project Coordinator: NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU,NO

Abstract

ECCSEL aims at gaining recognition as a world-class research infrastructure based within leading European Carbon Capture and Storage (CCS) institutions and knowledge centres. It will be due for registration in 2015, forming a legal entity allocating efforts and resources to selected scientific and technological aspects of the CCS chain. ECCSEL will enable high-ranking researchers and scientists from all regions of Europe (and from third countries) to access state-of-the-art research facilities to conduct advanced technological research actions relevant to CCS. The proposed project aims to :

• implement ECCSEL as a not-for-profit organisation consistent with the European Research Infrastructure Consortium legal framework;

• initiate operations of ECCSEL as a world-class CCS research infrastructure in accordance with the principles developed during the preparatory phase;

• develop the research infrastructure to an upgraded common standard in terms of quality of services, management and access provision.

Project's Partners List

ECCSEL

European Carbon Dioxide Capture and Storage Laboratory Infrastructure

Project's partners	Name	Country
1	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU	NO
2	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	NL
3	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
4	STIFTELSEN SINTEF	NO
5	Fundación Ciudad de la Energía	ES
6	PANSTWOWY INSTYTUT GEOLOGICZNY - PANSTWOWY INSTYTUT BADAWCZY	PL
7	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	IT
8	SINTEF ENERGI AS	NO
9	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	EL
10	SOTACARBO - SOCIETA TECNOLOGIE AVANZATE CARBONE SPA.	IT
11	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	CH
12	GLOWNY INSTYTUT GORNICTWA	PL
13	SINTEF PETROLEUM AS	NO
14	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES	FR

EMSODEV

EMSO implementation and operation: DEVelopment of instrument module

At a glance

Acronym: EMSODEV

Title: EMSO implementation and operation: DEVelopment of instrument module

Call: H2020-INFRADEV-1-2015-1

Instrument: Research and innovation action

Start date: 01/09/2015

End date: 31/08/2018

Duration: 36 months

Total Cost: € 4,529,864.98

EC Contribution: € 4,298,602.00

Consortium: 11 partners

Project Coordinator: ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA,IT

Abstract

The EMSODEV general objective is to catalyse the full operations of the EMSO distributed Research Infrastructure, through the development and deployment of the EMSO Generic Instrument Module (EGIM). EGIM will provide accurate, consistent, comparable, long-term measurements of ocean parameters, which are key to addressing urgent societal and scientific challenges (e.g. climate change and hazards). This will lead to an increased interoperability of EMSO nodes and to the common collection of ocean essential variable time series. The specific objectives are: (1) to design and implement a state-of-the-art, standardized multidisciplinary EGIM, a common, harmonized, observation system; (2) to fully test, calibrate, validate and assess the effectiveness of this innovative module in order to ensure its maximum quality, long-term durability, and reliability; (3) to strengthen the data management and delivery backbone of the EMSO RI; this will require a coordinated approach to data capture, archiving, management, and delivery, in turn spurring the development of a wide range of data products and services; (4) to promote the uptake of the project results and public-private partnerships establishing links with industry and SMEs for technology transfer. These objectives will be achieved through: (a) Research & Innovation activities focused on the design, development, test, replication and deployment of EGIMs at EMSO nodes and data management system implementation; (b) Communication, dissemination and exploitation activities aimed at disseminating and facilitating the uptake of the project results, and setting up activities to increase the innovation potential of EMSODEV technological output, and to explore EGIM commercialization. All these activities are in line with those listed in the part B of the section “Specific features for Research Infrastructures”. The consortium includes 11 multi-skilled partners, with two industries, ensuring the fulfilment of the objectives.

Project's Partners List

EMSODEV

EMSO implementation and operation: DEVelopment of instrument module

Project's partners	Name	Country
1	ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA	IT
2	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	FR
3	HELLENIC CENTRE FOR MARINE RESEARCH	EL
4	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
5	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
6	MARINE INSTITUTE	IE
7	UNIVERSITAET BREMEN	DE
8	INSTITUTO PORTUGUES DO MAR E DA ATMOSFERA IP	PT
9	INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU GEOLOGIE SI GEOECOLOGIE MARINA-GEOECOMAR	RO
10	SLR ENVIRONMENTAL CONSULTING(IRELAND)LIMITED	IE
11	ENGINEERING - INGEGNERIA INFORMATICA SPA	IT

pp2EMBRC

European Marine Biology Resource Centre preparatory phase 2

At a glance

Acronym: pp2EMBRC

Title: European Marine Biology Resource Centre preparatory phase 2

Call: H2020-INFRADEV-1-2015-2

Instrument: Coordination & support action

Start date: 01/10/2015

End date: 30/09/2016

Duration: 12 months

Total Cost: € 975,520.00

EC Contribution: € 975,520.00

Consortium: 16 partners

Project Beneficiary: CENTRO DE CIENCIAS DO MAR DO ALGARVE, PT

Abstract

"EMBRC is a distributed infrastructure of marine biology and ecology, encompassing aquaculture and biotechnology, exploiting the latest “omics”, analytical and imaging technologies, and providing on site and remote scientific and technical services to the scientific community of the public and private sector. EMBRC successfully completed a preparatory phase in early in 2014 with the production of a business plan and a memorandum of understanding (MoU) signed by 9 countries. A host for its headquarters has been chosen and and an ERIC application is in preparation. Since only institutions from 5 MoU signatory countries went through the preparatory phase, the present proposal has as objectives: 1) to harmonize the access mechanism to the operational EMBRC-ERIC across all the partners, putting all the practical tools in place, including host contracts and single point online access platform, to enable EMBRC-ERIC to commence its access program; 2) to put in place practical guidelines towards the full implementation of the new European and international legislation and commitments on access and fair benefit sharing of the use of marine biological resources, thus providing clarity to future users of EMBRC-ERIC about their legal rights over obtained biological resources, and positioning itself globally as a broker between users and the supplying countries ; 3) to focus the smart specialization of the regions onto the opportunities marine biological resources offer for blue-biotech development and innovation, thus demonstrating the member states that EMBRC is a tool towards economic development of their maritime regions, and enticing them to sign the EMBRC-ERIC, and prioritize its sustained support, particularly from regions which are now underrepresented in EMBRC (Black and Baltic Seas). These activities will ensure that the beneficiary research communities can exploit the results obtained at EMBRC-ERIC facility from the start with the highest efficiency."

Project's Partners List

pp2EMBRC

European Marine Biology Resource Centre preparatory phase 2

Project's partners	Name	Country
1	CENTRO DE CIENCIAS DO MAR DO ALGARVE	PT
2	UNIVERSITE PIERRE ET MARIE CURIE - PARIS 6	FR
3	STAZIONE ZOOLOGICA ANTON DOHRN	IT
4	MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM	UK
5	UNIVERSITEIT GENT	BE
6	HELLENIC CENTRE FOR MARINE RESEARCH	EL
7	THE HEBREW UNIVERSITY OF JERUSALEM	IL
8	UNIVERSIDAD DEL PAIS VASCO/ EUSKAL HERRIKO UNIBERTSITATEA	ES
9	UNIVERSITETET I BERGEN	NO
10	IMAR- INSTITUTO DO MAR	PT
11	UNIVERSIDAD DE VIGO	ES
12	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK
13	CONFERENCE DES REGIONS PERIPHERIQUES MARITIMES D EUROPE - ASSOCIATION	FR
14	HELSINGIN YLIOPISTO	FI
15	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK
16	VLAAMS INSTITUUT VOOR DE ZEE VZW	BE


European
Commission

2015

Introduction to Leadership in enabling and industrial technologies (LEIT)

Call for Nanotechnologies, Advanced Materials and Production

LORCENIS

Long Lasting Reinforced Concrete for Energy Infrastructure under Severe Operating Conditions

At a glance

Acronym: LORCENIS

Title: Long Lasting Reinforced Concrete for Energy Infrastructure under Severe Operating Conditions

Call: H2020-NMP-2015-two-stage

Instrument: Research and innovation action

Start date: 01/04/2016

End date: 31/03/2020

Duration: 48 months

Total Cost: € 7,970,130.00

EC Contribution: € 7,970,130.00

Consortium: 16 partners

Project Coordinator: STIFTELSEN SINTEF, NO

Abstract

"The main goal of the LORCENIS project is to develop long reinforced concrete for energy infrastructures with lifetime extended up to a 100% under extreme operating conditions. The concept is based on an optimal combination of novel technologies involving customized methodologies for cost-efficient operation. 4 scenarios of severe operating conditions are considered:

1. Concrete infrastructure in deep sea, arctic and subarctic zones: Offshore windmills, gravity based structures, bridge piles and harbours

2. Concrete and mortar under mechanical fatigue in offshore windmills and sea structures

3. Concrete structures in concentrated solar power plants exposed to high temperature thermal fatigue

4. Concrete cooling towers subjected to acid attack

The goal will be realized through the development of multifunctional strategies integrated in concrete formulations and advanced stable bulk concretes from optimized binder technologies. A multi-scale show case will be realized towards service-life prediction of reinforced concretes in extreme environments to link several model approaches and launch innovation for new software tools.

The durability of sustainable advanced reinforced concrete structures developed will be proven and validated within LORCENIS under severe operating conditions based on the TRL scale, starting from a proof of concept (TRL 3) to technology validation (TRL 5).

LORCENIS is a well-balanced consortium of multidisciplinary experts from 9 universities and research institutes and 7 industries whose 2 are SMEs from 8 countries who will contribute to training by exchange of personnel and joint actions with other European projects and increase the competitiveness and sustainability of European industry by bringing innovative materials and new methods closer to the marked and permitting the establishment of energy infrastructures in areas with harsh climate and environmental conditions at acceptable costs."

Project's Partners List

LORCENIS

Long Lasting Reinforced Concrete for Energy Infrastructure under Severe Operating Conditions

Project's partners	Name	Country
1	STIFTELSEN SINTEF	NO
2	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	EL
3	HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FUR MATERIAL- UND KUSTENFORSCHUNG GMBH	DE
4	UNIVERSIDADE DE AVEIRO	PT
5	ACCIONA INFRAESTRUCTURAS S.A.	ES
6	CBI Betonginstitutet AB	SE
7	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	ES
8	UNIVERSITEIT GENT	BE
9	FUNDACION AGUSTIN DE BETANCOURT	ES
10	FUNDACION CIDETEC	ES
11	KVAERNER CONCRETE SOLUTIONS AS	NO
12	SMALLMATEK - SMALL MATERIALS AND TECHNOLOGIES LDA	PT
13	SIKA TECHNOLOGY AG	CH
14	DYCKERHOFF GMBH	DE
15	VATTENFALL AB	SE
16	CHEMSTREAM BVBA	BE

PROCETS

PROtective composite Coatings via Electrodeposition and Thermal Spraying

At a glance

Acronym: PROCETS

Title: PROtective composite Coatings via Electrodeposition and Thermal Spraying

Call: H2020-NMP-PILOTS-2015

Instrument: Innovation action

Start date: 01/11/2015

End date: 30/04/2019

Duration: 42 months

Total Cost: € 8,651,911.98

EC Contribution: € 6,976,663.39

Consortium: 16 partners

Project Coordinator: ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS, EL

Abstract

Wear and corrosion of materials causes losses of 3-4% of GDP in developed countries and billions of Euros are spent annually on capital replacement and control methods for wear and corrosion infrastructure. As a result many important industries are dependent on surface engineering of protective coatings, making it one of the main critical technologies underpinning the competitiveness of EU industry. There are 2 main techniques that dominate the protective coatings sector: hard chromium (HC) plating and thermal spray (TS). However, HC plating faces a series of issues with most important the extremely negative health and environmental impact leading to the EC restriction of this method for using Cr+6 by the end of 2017. Similarly, recent toxicity studies concerning Co-WC cermet applied by TP have revealed that Co-WC particles are toxic in a dose/time-dependent manner. Consequently, there is the necessity of finding new, less hazardous methods and materials exhibiting the same or better performance compared to existing ones. The PROCETS project will took advantage of the use of nano-particles for production of composite coatings with superior properties compared to those of HC produced by electroplating or to Co-WC produced by TS. These novel nano-particles will be incorporated into existing production lines after appropriate modifications. The new procedures will be easily transferred by minor adaption to the present electroplating and TS facilities, and will combine flexibility and mass customization abilities, restrict environmental and health hazards and finally be available at acceptable cost. Thus, PROCETS main target is to deliver protective coatings covering a wide range of applications such as automotive, aerospace, metal-working, oil and gas and cutting tools industries via thermal spray and electroplating methods by utilizing more environmental friendly materials, compared to the currently used.

Project's Partners List

PROCETS

PROtective composite Coatings via Electrodeposition and Thermal Spraying

Project's partners	Name	Country
1	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	EL
2	TENNECO AUTOMOTIVE EUROPE BVBA	BE
3	POLITECNICO DI MILANO	IT
4	AVANZARE INNOVACION TECNOLOGICA SL	ES
5	UNIVERSITAT DE BARCELONA	ES
6	INSTITUTO DE SOLDADURA E QUALIDADE	PT
7	TEKNISKA HOGSKOLAN I JONKOPING AB	SE
8	FALEX TRIBOLOGY NV	BE
9	HUSQVARNA AB	SE
10	MBN NANOMATERIALIA SPA	IT
11	CROMOMED SA	ES
12	ARTIA NANO - ENGINEERING & CONSULTING IKE	EL
13	MATRES SCRL	IT
14	CENTER OF TECHNOLOGY RESEARCH AND INNOVATION LTD	CY
15	BRITISH ALLIED TRADES FEDERATION LBG	UK
16	WIENERBERGER AG	AT


European
Commission

2015

Introduction to Leadership in enabling and industrial technologies (LEIT)

Call - Space

BASE - Platform

BASE-Platform - Bathymetry Service Platform

At a glance

Acronym: BASE-Platform

Title: BASE-Platform - Bathymetry Service Platform

Call: H2020-EO-2015

Instrument: Innovation action

Start date: 01/12/2015

End date: 30/11/2017

Duration: 24 months

Total Cost: € 2,222,394.95

EC Contribution: **€** 1,781,326.25

Consortium: 7 participants

Project Coordinator: DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV, DE

Abstract

BASE-platform provides an innovative service for satellite derived bathymetric data for a broad range of users through a commercial service platform. Bathymetry is the measure of the water depth similar to underwater topography. BASE-platform has the ambition to establish a commercial service platform for bathymetric data, which is sharpened to user needs and provides most easy access. Its impact is expected to significantly influence the current market, its survey methodologies and the way bathymetric data can be accessed and used. Up-to date bathymetric data are essential for multiple purposes such as navigation, port and offshore construction, security, coastal zone management, fishery, cruising and tourism and required accordingly by various user groups. Conventional survey methods are either ship or airplane based and costly and time consuming. For these reasons, extended areas of shallow and deep water areas in Europe and worldwide are not mapped within an adequate accuracy or existing data are out of date. Earth Observation data, especially the Copernicus mission will play a key role to overcome this lack of data. BASE-platform focuses on Satellite Derived Bathymetry (SDB) as an innovative, rapid and cost effective approach to determine bathymetry from space. SDB in combination with hydrodynamic models to minimize tidal effects and crowd sourced bathymetric for validation purposes will provide those data. The BASE-platform service will be accessible through a commercial platform, which includes relevant components for a sustainable and client focused business. The services will be demonstrated, validated and improved in use cases. Relevant key players are involved for this purpose. The economic benefits of this new EO service will be analysed in a business analysis and model. Finally several dissemination actions will race awareness and increase the potential client group.

Project's Participants List

BASE-Platform

BASE-Platform - Bathymetry Service Platform

Project's partners	Name	Country
1	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DE
2	ISARDSAT SL	ES
3	EOMAP GMBH & CO KG	DE
4	STICHTING DELTARES	NL
5	SMARTCOM SOFTWARE LTD	UK
6	FIND MAPPING LIMITED	UK
7	MARIENE INFORMATIE SERVICE MARIS BV	NL

Co-ReSyF

Coastal Waters Research Synergy Framework

At a glance

Acronym: Co-ReSyF

Title: Coastal Waters Research Synergy Framework

Call: H2020-EO-2015

Instrument: Research and innovation action

Start date: 01/01/2016

End date: 31/12/2018

Duration: 36 months

Total Cost: € 2,999,901.25

EC Contribution: € 2,999,901.25

Consortium: 8 participants

Project Coordinator: DEIMOS ENGENHARIA S.A., PT

Abstract

The Co-ReSyF project will implement a dedicated data access and processing infrastructure, with automated tools, methods and standards to support research applications using Earth Observation (EO) data for monitoring of Coastal Waters, leveraging on the components deployed SenSyF. The main objective is to facilitate the access to Earth Observation data and pre-processing tools to the research community, towards the future provision of future Coastal Waters services based on EO data. Through Co-ReSyF's collaborative front end, even young and/or inexperienced researchers in EO will be able to upload their applications to the system to compose and configure processing chains for easy deployment on the cloud infrastructure. They will be able to accelerate the development of high-performing applications taking full advantage of the scalability of resources available in the cloud framework. The included facilities and tools, optimized for distributed processing, include EO data access catalogue, discovery and retrieval tools, as well as a number of pre-processing and toolboxes for manipulating EO data. Advanced users will also be able to go further and take full control of the processing chains and algorithms by having access to the cloud back-end and to further optimize their applications for fast deployment for big data access and processing. The Co-ReSyF capabilities will be supported and initially demonstrated by a series of early adopters that will develop new research applications on the coastal domain, will guide the definition of requirements and serve as system beta testers. A competitive call will be issued within the project to further demonstrate and promote the usage of the Co-ReSyF release. These pioneering researchers in will be given access not only to the platform itself, but also to extensive training material on the system and also on Coastal Waters research themes, as well as to the project's events, including the Summer School and Final Workshop.

Project's Participants List

Co-ReSyF

Coastal Waters Research Synergy Framework

Project's partners	Name	Country
1	DEIMOS ENGENHARIA S.A.	PT
2	TERRADUE SRL	IT
3	ACRI-HE	FR
4	ARGANS LIMITED	UK
5	INSTITUTO HIDROGRAFICO	PT
6	LABORATORIO NACIONAL DE ENGENHARIA CIVIL	PT
7	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
8	NATURAL ENVIRONMENT RESEARCH COUNCIL	UK

EONav

Earth Observation for Maritime Navigation

At a glance

Acronym: EONav

Title: Earth Observation for Maritime Navigation

Call: H2020-EO-2015

Instrument: Innovation action

Start date: 01/05/2016

End date: 30/04/2019

Duration: 36 months

Total Cost: € 2,606,937.50

EC Contribution: € 1,999,793.75

Consortium: 7 participants

Project Coordinator: O.M. OFFSHORE MONITORING LIMITED, CY

Abstract

EONav presents an entirely new concept of combining space-based remote sensing observations which are offered by Copernicus with local maritime ship observations to aid maritime sail planning for fuel, emission and fatigue optimization. High fuel costs, consequences of delays in ship passages, reduction of SO2/CO2/NOx and similar emissions and other constraints are now putting more pressure on the maritime industry. Thus utilizing sea state, sea ice and AIS observations from space-based remote sensing, and particularly from Copernicus, allow the sea masters and planners to integrate more accurate and reliable observations to optimize their sail plan and thereby greatly increase profitability. This project is going to bring Copernicus remote sensing observations into sail planning tools with the objective of very significantly improve sail plan accuracy and reliability

Project's Participants List

EONav

Earth Observation for Maritime Navigation

Project's partners	Name	Country
1	O.M. OFFSHORE MONITORING LIMITED	CY
2	ADVANCED COMPUTER SYSTEMS A.C.S. SPA	IT
3	G.M.S. GLOBAL MARITIME SERVICES LIMITED	UK
4	CHALMERS TEKNISKA HOEGSKOLA AB	SE
5	OFFSHORE NAVIGATION LIMITED	AI
6	COLOR LINE MARINE AS	NO
7	MARITIME LAURIN MARITIME AB	SE

EO4wildlife

Platform for wildlife monitoring integrating Copernicus and ARGOS data

At a glance

Acronym: EO4wildlife

Title: Platform for wildlife monitoring integrating Copernicus and ARGOS data

Call: H2020-EO-2015

Instrument: Research and innovation action

Start date: 01/01/2016

End date: 31/12/2018

Duration: 36 months

Total Cost: € 2,665,325.00

EC Contribution: € 2,665,325.00

Consortium: 7 participants

Project Coordinator: ATOS SPAIN SA, ES

Abstract

EO4wildlife main objective is to bring large number of multidisciplinary scientists such as biologists, ecologists and ornithologists around the world to collaborate closely together while using European Sentinel Copernicus Earth Observation more heavily and efficiently. In order to reach such important objective, an open service platform and interoperable toolbox will be designed and developed. It will offer high level services that can be accessed by scientists to perform their respective research. The platform front end will be easy-to-use, access and offer dedicated services that will enable them process their geospatial environmental stimulations using Sentinel Earth Observation data that are intelligently combined with other observation sources. Specifically, the EO4wildlife platform will enable the integration of Sentinel data, ARGOS archive databases and real time thematic databank portals, including Wildlifetracking.org, Seabirdtracking.org, and other Earth Observation and MetOcean databases; locally or remotely, and simultaneously. EO4wildlife research specialises in the intelligent management big data, processing, advanced analytics and a Knowledge Base for wildlife migratory behaviour and trends forecast. The research will lead to the development of web-enabled open services using OGC standards for sensor observation and measurements and data processing of heterogeneous geospatial observation data and uncertainties. EO4wildlife will design, implement and validate various scenarios based on real operational use case requirements in the field of wildlife migrations, habitats and behaviour. These include: (1) Management tools for regulatory authorities to achieve real-time advanced decision-making on the protection of protect seabird species; (2) Enhancing scientific knowledge of pelagic fish migrations routes, reproduction and feeding behaviours for better species management; and (3) Setting up tools to assist marine protected areas and management.

Project's Participants List

EO4wildlife

Platform for wildlife monitoring integrating Copernicus and ARGOS data

Project's partners	Name	Country
1	ATOS SPAIN SA	ES
2	ATOS ORIGIN INTEGRATION SAS	FR
3	COLLECTE LOCALISATION SATELLITES SA	FR
4	AGENCE DES AIRES MARINES PROTEGEES	FR
5	BIRDLIFE INTERNATIONAL	UK
6	UNIVERSITY OF SOUTHAMPTON	UK
7	THE UNIVERSITY OF EXETER	UK


European
Commission

2015

Science with and for Society

Call – FOR INTEGRATING SOCIETY IN SCIENCE AND INNOVATION

At a glance

Acronym: MARINA

Title: Marine Knowledge Sharing Platform for Federating Responsible Research and Innovation Communities

Call: H2020-ISSI-2015-1

Instrument: Coordination and support action

Start date 05/01/2016

End date: 30/04/2019

Duration: 36 months

Total Cost: € 2,999,943.75

EC Contribution: € 2,999,943.75

Consortium: 14

Project Coordinator: CONSIGLIO NAZIONALE DELLE RICERCHE, IT

MARINA

Marine Knowledge Sharing Platform for Federating Responsible Research and Innovation Communities

Abstract

The Marina proposal overall aim is to create an all-inclusive Knowledge Sharing Platform (KSP) catalysing and organising the convergence of already existing networks, communities, on-line platforms and services providing an online socio-technical environment that facilitates and stimulates the direct engagement of researchers, Civil Society Organisations (CSOs), citizens, industry stakeholders, policy and decision makers, research funders and communicators for improving Responsible Research and Innovation. In particular, the project will establish, curate and experiment a Responsible Research and Innovation platform involving societal actors working together during the whole research and innovation process for aligning better both the process and its outcomes, with the values, needs and expectations of European society, integrating citizens visions, needs and desires into science and innovation, promoting RRI with focus on marine issues and pressures that have important effects on the European societies. The project activities and outcomes, even if connected with marine research field, will define this systematic approach in order to make it transferable and reproducible for any RRI thematic domain. All project results and activities will be extrapolated from the RRI marine field to general RRI and broadly disseminated. The expected outcome of the Work Programme is a clear improvement of the integration of society in science and innovation. The MARINA project will follow this strategic line of "strengthening and facilitating" the capacity of the research and innovation to align and integrate the social needs through a suitable knowledge sharing platform and federating activities.

MARINA

Marine Knowledge Sharing Platform for Federating Responsible Research and Innovation Communities

Project's Participants List

Project's partners	Name	Country
1	CONSIGLIO NAZIONALE DELLE RICERCHE	IT
2	Istituto Superiore per la Protezione e la Ricerca Ambientale	IT
3	XPRO CONSULTING LIMITED	CY
4	FUNDACAO EUROCEAN	PT
5	ORGANIZATIA ECOLOGISTA NEGUVERNAMENTALA MARE NOSTRUM	RO
6	SIHTASUTUS TEADUSKESKUS AHHAA	EE
7	SMARTBAY IRELAND LIMITED	IE
8	CYPRUS NEUROSCIENCE AND TECHNOLOGY INSTITUTE	CY
9	AGENZIA PER LA PROMOZIONE DELLA RICERCA EUROPEA	IT
10	SOCIETE D'EXPLOITATION DU CENTRE NATIONAL DE LA MER	FR
11	RESEAU OCEAN MONDIAL AISBL	BE
12	Asociacion - Centro de Investigacion Cooperativa en Nanociencias - CIC NANOGUNE	ES
13	AALBORG UNIVERSITET	DK
14	ISTANBUL UNIVERSITESI	TR


European
Commission

2015

Science with and for Society

Call – FOR MAKING SCIENCE EDUCATION AND CAREERS ATTRACTIVE FOR YOUNG PEOPLE

Marine Mammals

Using marine mammals for making science education and science careers attractive for young people

At a glance

Acronym: Marine Mammals

Title: Using marine mammals for making science education and science careers attractive for young people

Call: H2020-SEAC-2015-1

Instrument: Coordination and support action

Start date: 01/09/2016

End date: 31/08/2019

Duration: 36 months

Total Cost: € 1,797,420.00

EC Contribution: € 1,797,420.00

Consortium: 9 participants

Project Coordinator: CHRISTIAN-ALBRECHTS-UNIVERSITAET ZU KIEL, DE

Abstract

The Marine Mammals proposes to create a European consortium of education and research institutions, alongside small to medium enterprises, to promote STEM subjects and students' interest in science careers. All project partners are internationally renowned experts in their field of work. Together with teachers and educational scientists they will form expert groups who will develop teacher trainings and summer schools for secondary school students based on state of the art research on marine mammals. The project will draw on the vast variety of existing materials from all partners and use current methods and results from educational research to select and adapt it accordingly. Combining the resource materials delivered by the different expert groups coherent cross-national entities for teacher trainings and summer schools will be produced and translated into all languages of the participating countries plus English. It will be ensured that the materials can be used in conjunction with the science curriculum of the schools in all participating countries. Teacher trainings and summer schools will be carried out in all partner countries. During the summer camps and the teacher trainings both groups will work in close contact with scientists from different disciplines and gain first hand insights into 'real' science as well as the profession of a scientist. As a consequence they will update their perception of scientists and scientific jobs and hopefully gain interest in scientific careers. For evaluating the success of the project, established questionnaires will be adapted, tested and revised to be finally used in a pre-/ post design. By involving science centres and public aquariums the developed teaching material will finally be used for creating outreach materials and activities suitable for audiences of different background and age, utilising current technology to engage a wider audience (e.g. interactive posters, podcasts, social media and 3D animations).

Project's Participants List

Marine Mammals

Using marine mammals for making science education and science careers attractive for young people

Project's partners	Name	Country
1	CHRISTIAN-ALBRECHTS-UNIVERSITAET ZU KIEL	DE
2	UNIVERSITE DE LIEGE	BE
3	FUNDACJA ROZWOJU UNIWERSYTETU GDANSKIEGO	PL
4	SYDDANSK UNIVERSITET	DK
5	STIFTUNG TIERAERZTLICHE HOCHSCHULE HANNOVER	DE
6	HAVETS HUS I LYSEKIL AKTIEBOLAG	SE
7	WOLLNY-GOERKEWOLLNY KATRIN	DE
8	FUNDACJA WWF POLSKA	PL
9	LEIBNIZ-INSTITUT FUR DIE PADAGOGIKDER NATURWISSENSCHAFTEN UND MATHEMATIK AN DER UNIVERSITAT KIEL	DE

EUROPEAN COMMISSION

Director-General for Research and Innovation
Directorate F – Bioeconomy
Unit F.4 – Marine Resources

European Commission
Building COV2 - 9th floor
B-1049 Brussels

Horizon 2020 website: https://ec.europa.eu/progr

Bioeconomy website: https://ec.europa.eu/researc

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