JOINT EUROPEAN RESEARCH INFRASTRUCTURE
NETWORK FOR COASTAL OBSERVATORIES

Interim Periodic Activity Report

Grant Agreement n° 262584
Project Acronym: JERICO
Project Title: TOWARDS A JOINT EUROPEAN RESEARCH INFRASTRUCTURE NETWORK FOR COASTAL OBSERVATORIES
Start date of project: 1st May 2011 **Duration:** 48 months

Funding Scheme:

Date of latest version of Annex I against which the assessment will be made:

Periodic report: 0☐ 1st☐ 2nd X 3rd ☐

Period covered: from Month 18 to Month 36

Name, title and organisation of the scientific representative of the project's coordinator[1]: Patrick FARCY – coordinator - Ifremer

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SEVENTH FRAMEWORK PROGRAMME

Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate) [2]:

  ☐ has fully achieved its objectives and technical goals for the period;

  X has achieved most of its objectives and technical goals for the period with relatively minor deviations.

  ☐ has failed to achieve critical objectives and/or is not at all on schedule.

- The public website, if applicable

  X is up to date

  ☐ is not up to date

- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 3.4) and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 3.2.3 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the Coordinator: .....Patrick Farcy .....

Date: .....31...../ .July...../ .2014....

For most of the projects, the signature of this declaration could be done directly via the IT reporting tool through an adapted IT mechanism.

[2] If either of these boxes below is ticked, the report should reflect these and any remedial actions taken.

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REFERENCES

Annex 1 to the Contract: Description of Work (DoW) version 2014-06-03

Document information	
Document Name	Second periodic report – Month 18 to 36
Document ID	*JERICO-WP11-PERIODIC-M36-300614-V2*
Revision	2
Revision Date	2014-07-28
Author	Ingrid Puillat, Patrick Farcy, Nolwenn Beaume, WP leaders
Security	

History			
Revision	**Date**	**Modification**	**Author**
1	15-06-2014		WP leaders
1.1	2-07-2014	Deliverable update	P Farcy
1.2	8-07-2014	WP1 and WP10 updates	WP leaders
2	31-07-2014	Final inputs aspects	P. Farcy N. Beaume

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Diffusion list				
Consortium beneficiaries	X			
Third parties				
Associated Partners				

PUBLISHABLE EXECUTIVE SUMMARY

1 PROJECT OBJECTIVES AND MAJOR ACHIEVEMENTS DURING THE REPORTING PERIOD

1.1 Objectives for the reporting period, work performed and the main achievements in the period

- **Objectives of the reporting period**

The main objectives of the 2nd period were to finalise the "best practices handbooks" for glider (with GROOM), ferrybox and fixed platform. The project organises also workshops on JRA (Villefranche in October 2013) for presenting the mid-term results of WP10. JERICO also launched the second and third calls for Trans National Access.
The mid-term review has been pass successfully in june 2013. The second general Assembly was held in Oslo on the 5th and 6th of May 2014. A dedicated JERICO website has been upgraded. All the submitted deliverables (except the consortium agreement) are available on this site: www.jerico-fp7.eu

- **Work performed and main achievements in period**

  - **WP11:** The management task was performed by the project management team of Ifremer, including the coordinator (Patrick Farcy), the deputy coordinator (Ingrid Puillat) and the administrative officer (Dominique Gueguen) helped by Maëlle Pichard and Nolwenn Beaume from Ifremer. HCMR and NIVA are associated to that WP for the Quality Assessment plan, delivered in October 2011, and the Identity set in January 2012.
    The management team organised the general Assemblies in Iraklion (October 2012), in Oslo (May 2014), the 3rd steering Committee in Galway (May 2014) and the 4th one in Brussels (February 2015). In May 2014, the second general Assembly week was organised in Oslo with the support of NIVA who managed the on site organisation. This event was an opportunity to organise also the 5th Steering committee and one workshop the first one on the future strategy of coastal observatories. The management team provided the first period technical and financial reporting, and also the mid-tem report for the mid term review held in Paris in June 2013.
    The management team formalise also the agreements with new associated partners: PLOCAN (Spain), GEOECOMAR (Romania) and UPC (Barcelone, Spain).

    WP1: The "JERICO label" has been completed. The second JERICO FCT (Forum for Coastal Technology) was held in London, during "Oceanology International" in March 2014. It was based dedicated on optical sensors, mainly for dissolved oxygen. In parallel with the first FCT workshop, we organised an in-situ calibration experiment jointly with WP4 in the bay of Villefranche.
    A dedicated workshop on the future strategy is to be provided after the second general assembly. The task 1.4 on biodiversity is completed; the deliverable is available on the Jerico website

The 2nd and 3rd calls for TNA have been lunched and submitted proposals evaluated by the Selection panel. Totally we have scheduled 19 users projects, Six of which have been executed and other 6 started in the reporting period. The 3rd call was extraordinary (it was not planned in Annex 1 – Description of Work) and was planned to consume residual budget.

- **WP2:** The planned deliverables for the Work package; namely
  - the report on existing observation networks were to provide a review of the present status of the observation systems integrating the activies ongoing in the different regional Alliances of the European Global Ocean observing system (EuroGOOS).(D.2-1)
  - the report on recommendations for future research and development for filling gaps in observations was to provide an overview of the main challenges the existing observational systems are facing to provide an integrated status of the marine environment and to identify knowledge gaps, that are recommended to fill within the upcoming years (D.2-2)
  - the compilation of the pan European atlas of existing observing systems (D.2-3)
  - the report on the demonstration of the feasibility of the trans-regional product production on transport as well as on E-HYPE were to provide evidence of the feasibility of transregional product production aiming to develop these products for the transport of Water masses and as well for the River runoff provided by the EHYPE model (D.2-4) has been delivered and Workpackage meeting were held in order to plan the activities and the remainder of efforts towards the end of the project.

- **WP3:** The first "Best practices Workshops" on Ferrybox (August 2011), on fixed platforms (February/March 2012) and on gliders (May 2012) were organised. A complementary workshop was also organized in Iraklion, just after the first general assembly. The "best practices handbooks", deliverables of that WP, are now completed and available on the Jerico website, for each platform: ferrybox, glider and fixed platforms. These documents are often upgraded to integrate new information and methodologies.

- **WP4:** The second calibration exercise/workshop took place at the oceanographical laboratory facilities in Villefranche (October 2013) in parallel with the WP10 mid term workshop event. In the framework of the first task two deliverables were completed; D4.1 Report on Existing Calibration Facilities & D4.2 Report on Calibration Best Practices. In the framework of the second task one more deliverable has been completed D4.3 Report on Biofouling Prevention Methods. Towards the last two deliverables, platform specific group were formed and have commenced work.

- **WP5:** The Jerico data is flowing through two data streams: i) the GMES/EUROGOOS/MyOcean data stream for near real time data ii) the SeadataNet data stream for data flowing in delayed-mode. The first two deliverables on Real Time and Delayed Mode are updated:
  i) Near real time data management handbook,
  ii) Delayed Mode data management handbook.
  The "First Data Management Report" (D5.3) was prepared and submitted. The works to interface Jerico's partner data to MyOcean In-situ TAC and SeaDataNet are quite

complete unless if NERC infrastructure is not integrated because the infrastructure is not running. Efforts were mainly directed towards assuring that the (near) real-time (NRT) data coming from Partners involved in WP7 (Services and Data Access) were being made available and readied for distribution.
A specific indexing and data distribution scheme was created for Jerico data.

- **WP6:** The Jerico Community Hub has been established since January 2012: www.jerico-fp7.eu. This has links to Trans National Access, FCT, OceanBoard, Workshops, meeting documents and submitted deliverables. The Jerico Datatool is complete and can be accessed from the Community Hub. The Datatool gives users access to integrated data products and datasets from MyOcean via a user interface. The Jerico OceanBoard is complete and can also be accessed from the Community Hub: http://www.jerico-fp7.eu/oceanboard. New content and articles are regularly uploaded OceanBoard PUB and PROF web pages. The OceanBoard is used for presenting Jerico results, deliverables, news articles and advertising events. The web tool 'Follow the Glider' has been developed (http://www.jerico-fp7.eu/follow-the-glider). It has real-time data visualisation, with specific and adapted explanations for children on why we measure and monitor coastal oceans.
There are two Jerico summer schools. The first in Malta 8–13th June 2013 entitled 'Operational oceanography in the 21st century – the coastal seas'. The second summer school is in The Netherlands, hosted by Deltares 14–20th June 2014, entitled 'From data to decisions' and the course will aim to cover the entire marine and coastal information cycle.

- **WP7:** All the data identified in the WP are now available in MyOcean In situ TAC database, except data to be provided by the NERC. These data are nort available because the infrastructures are closed. The integration of the data into SeaDataNet is on going. The TOP have started.

- **WP8:** The preparation of the TNA calls is one of the tasks of WP1. The 2nd call was published on January14th 2013. Text of the call was completed in December 2012. TNA web page was implemented in the JERICO Website and continuously updated. 6 proposals were submitted by user groups and 5 of them were evaluated and approved by the Selection Panel. The first selected project started in October 2013. The 3rd call was extraordinary (it was not planned in Annex 1 – Description of Work) and was planned to consume residual budget. It was published on September 19th 2013. Text of the call was completed in August 2013. TNA web page was implemented in the JERICO Website and continuously updated. 5 proposals were submitted by user groups, all were evaluated and approved by the Selection Panel. The projects have not yet started at the date of this report.

- **WP9:** The WP leader had changed. The new work package leader organised a new meeting by Skype first and face to face at the end of April 2014 and beginning of May in Oslo. A final workshop on OSE and OSSE harmonised with WP2, WP3, WP4 and WP5 will be organized at the end of October. The 2 last deliverables, D9.4 and D9.5, are postponed.

- **WP10:** The main integrating activity in WP10 was the Workshop held in Villefranche, France during October 2013. All scientists involved in WP10 attended as did many scientists from outside the JERICO consortium. Several trials and

deployments are still ongoing with the result that deliverable D10.1 will now be provided in M39 (September 2014) to allow the inclusion of the recent experiments in the reporting. Overall, progress on the three other deliverables (due in M42) is on track.

1.2 Comment on the most important problems during the period including the corrective actions taken

The main source of delays during this second period is on the definition of the Label. We under estimated the difficulties of such definition and the time that we need to spent to propose a coherent one.
Some deliverables planned in the second period were slightly sifted (2 or 3 month delays). The "Second summer school" (in WP6) will be held in June 2014.
The WP9 leader has left CMCC. The new WP leader is Simona Masina.

In WP11, Deliverable D11.5 "Second periodic activity report" was erroneously due to month M36 according to the DoW, but this date did not take in account the 60 days contractually agreed to prepare the report: it should be due for Month 39. In addition some deliverables have been submitted M38: D1.4, D1.9, D3.4, D4.2, D4.3 & D5.4. Some are postponed to the third period:

- D1.8 on Second assessment of the FCT activity in order to take into account the results of the 3rd call;
- D9.5 and D9.6 postponed to M43 due to a lack of leadership during 6 months;
- D10.1 which is not ready because of some delays in some results.

In WP1, the two main difficulties encountered in the first reporting are now behind us: the task 1.2 "JERICO label definition" deliverable needed more efforts than expected but now the deliverable is ready and includes results of Best Practices defined all along the project duration. Task 1.4, Definition Strategy is now completed by NIOZ.
Task 1.6 required 1 month of extra effort by CNR to organize and manage the evaluation of the 3rd extraordinary Call (it was not planned in Annex 1 – Description of Work) and was added to consume residual budget.

In WP2, with the delivery of the Deliverables D2.1-D2.4, the Workpackage is back on the planned schedule.

In WP3, The deliverable D3.4 (Report on new sensor developments) has been postponed due to some interactions with and coordination with WP 10, deliverable D10.4. The final version has been delivered in June 2014 (M38).

In WP4, The deliverable D4.1 - Report on existing facilities with the capacity to handle pressure, temperature, salinity and dissolved oxygen calibrations amongst the active coastal observing networks planned for M18, (October 2013) and was delayed it was delivered in January 2013. The deliverable D4.2 - Report on calibration best practices planned for M36 (April 2014) it was delivered with a two-month delay as input from the partners during the GA in Oslo was important. The deliverable D4.3 - Report on biofouling prevention methods

planned for M36 (April 2014) it was delivered with a two-month delay as input from the partners during the GA in Oslo was important.

In WP5, the WP leader has changed at OGS. The work on sensor-ML is still ongoing.

In WP6, the summer schools were postponed by one calendar year for each school. Thus the new dates were June 2013 for Course 1 and June 2014 for Course 2. This change was agreed at the outset of the JERICO programme (1st steering committee decision) because more time was needed for the partners to prepare for and to design the summer schools. The partner leading the OceanBoard, University of Malta, did not receive enough articles for the PROF and PUB sites. Reminders and requests for contributions were given at the General Assemblies and the Steering Committee meetings.

In WP8, changes were requested by some beneficiaries due to access costs re-calculation (INSU/CNRS) and withdrawal of facilities from the offer in TNA (NERC, NIVA, CNR, IBW PAN). These changes are part of the amendment of the DoW proposed after the mid-term review. Funds not used by beneficiaries as assigned in the DoW and will be added to the TNA budget for travel grants of users and Selection Panel members and partially redistributed among TNA beneficiaries whose facilities delivered more access than originally planned.

In WP9, the work package leader, Srdjan Dobricic, resigns from CMCC. It took 6 month to CMCC to nominate a new one: Dr Simona Massima. Accordingly the two last deliverables D9.5 and D9.6, with final reports on the status of OSE and OSSE experiments, previously planned for M36 are postponed to M43.

In WP10, the first deliverable is not ready due to the delay of the 10.3 experiment in the Adriatic Sea. It will be postponed to M40.

2 WORK PACKAGE PROGRESS AND ACHIEVEMENTS DURING THE PERIOD

Work Package leaders - Primary contacts (PC) and substitutes (S)						
Beneficiary	Person			Activity Coordinators	Roles	
	First Name LASTNAME	Email Address	Work Package activities			
IFREMER	Patrick FARCY	Patrick.farcy@ifremer.fr	General coordination of the project	COORD	WP11	PC
	Ingrid PUILLAT	ingrid.puillat@ifremer.fr	GA organization, QAP, reporting			S
CNRS	Pascal MORIN	pmorin@sb-roscoff.fr	A common strategy	NA	WP1	PC
	Ingrid PUILLAT Dominique DURAND	ingrid.puillat@ifremer.fr dominique.durand@niva.no	Share a strategic view for the future, promote an open access to facilities and organize a FCT			S
IMR	Henning WEHDE	henning.wehde@imr.no	Strengthening regional and trans-regional activities,	NA	WP2	PC
	Patrick GORRINGE	Patrick.gorringe@smhi.se	State of the art in the ROOS and cross regional integration			S
HZG	Wilhelm PETERSEN	wilhelm.petersen@hzg.de	Observing system technologies	NA	WP3	PC
	Richard Lampitt	richard.lampitt@noc.ac.uk	Ferrybox, gliders and fixed platforms			S
HCMR	George PETIHAKIS	gpetihakis@hcmr.gr	Harmonization of operation and maintenance methods	NA	WP4	PC
	Manolis NTOUMAS	mntou@hcmr.gr	Calibration, bio-fouling prevention, end to end quality control			S
OGS	Caterina FANARA	cfanara@ogs.trieste.it	Data distribution	NA	WP5	PC
	Rajesh NAIR Gilbert MAUDIRE	rnair@ogs.trieste.it Gilbert.Maudire@ifremer.fr	Harmonization real time & delayed mode – SeaDataNet & MyOcean			S
CEFAS	David MILLS	david.mills@cefas.co.uk	Public outreach and education	NA	WP6	PC
	Jo FODEN Aldo DRAGO	jo.foden@cefas.co.uk aldo.drago@um.edu.mt	End-user services, datatools, OceanBoard and summer schools			S
IFREMER	Loic Petit de la VILLEON	Loic.Petit.De.La.Villeon@ifremer.fr	Data access & targeted operational phases	TNA	WP7	PC
	Patrick FARCY	Patrick.farcy@ifremer.fr				S
CNR	Stefania SPARNOCCHIA	stefania.sparnocchia@ismar.cnr.it	Access to trans-national facilities	TNA	WP8	PC
	Margherita CAPPELLETTO	margherita.cappelletto@cnr.it	Fixed platforms, ferryboxes, gliders and calibration facilities			S
CMCC	Simona MASINA	simona.masina@cmcc.it	Observing system design	JRA	WP9	PC
	Ali AYDOGDU	ali.aydogdu@cmcc.it	OSE and OSSE			S
MI	Glenn NOLAN	Glenn.Nolan@marine.ie	Improve the system components	JRA	WP10	PC
	Antoine GREMARE	a.gremare@epoc.u-bordeaux1.fr	Biological processes, physico-chemical sensors, emerging technology, ship of opportunity and FerryBox quality control			S

• 2.1 WP 1 – A COMMON STRATEGY

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Institution name and Acronym: Centre National de la Recherche Scientifique/Institut National des Sciences de l'Univers, CNRS/INSU

• *2.1.1 Progress towards objectives – tasks worked on and achievements made*

Task 1.1 Set up the scene and implementation plan
The deliverable D1.2 "Rationale and definitions for a common strategy" has been submitted in month 21. The deliverable was accepted. The background, state of the art on best practices and the main challenges to be answered have been established for the different types of platforms. Implementation plans with expected outputs from the different workpackages have been proposed. Dedicated workshops on the future strategy are the first step towards the definition of the Roadmap for the future; the task has started after month 24 and two workshops have been held in Villefranche in October 2013 and in Brussels in March 2014.

Task 1.2 JERICO Label
The deliverable D1.4 JERICO Label Definition proved to be a rather difficult task mainly due to the wide variability between the different platforms in terms of operations and requirements. Moreover during the various meetings it was decided that a crucial component of the deliverable would be the various reports on Best Practices within WP4, which are scheduled towards the end of the project. Thus it was not possible to be delivered on month 18 and was postponed for later. Finally the effort scheduled (2mm) was very low as numerous meetings had to be organized:

DATE	PLACE
15-18 May 2013	GALWAY
17-22 June 2013	PARIS
2-7 October 2013	MADRID
24-28 February 2014	BRUSSELS
10-14 March 2014	LONDON
4-9 May 2014	OSLO

Summarizing the document is in its final form and will be delivered soon composed by two major parts; mandatory rules and recommendations to be applied at different levels of the entire JERICO observatory network while the document will be updated with the other platforms used in the coastal observations and not included. It provides recommendations on sensing technologies for each platform, operating issues and deployment - installation. It highlights the importance of performing tests before any long-term deployment at the demanding coastal sea environment. It gives guidelines to define and implement a test plan. As mentioned JERICO deliverables on Operation Best Practices, Biofouling and Calibration become a reference of the JERICO Label as soon as they are delivered. The document needs to be updated continuously with the evolution of technology, of gained experience and new needs.

Task 1.3 Forum for Coastal Technologies (FCT)
After the first organisation of a metrology experiment, jointly with WP4 held in October 2012, in Ifremer Brest, a second interactive workshop to identify the best practices about DO calibration procedure has been realized during the 2nd FCT at Oceanology International 2014 in London (13th March). During this workshop two sessions were organized with four presentations focussing on the scientific aspects (by Ifremer, HZG, CNRS and National Metrology Lab. and four presentations focussing on manufacturer aspects (by Anderaa, Rinko, Sea-Bird, NKE). The Session 2 was dedicated to a facilitated discussion about three themes: adapted calibration (coastal or open sea) and the essential calibration steps (good practices), calibration market (low cost sensors, training, certification, QC) and main field vs lab issues.

Task 1.4 Definition strategy and interfaces with monitoring of marine biodiversity
Sander Wijnhoven from NIOZ took back this task, after the death of Mr Carlo Heip in February 2013. A study on the state and evolution of marine biodiversity in European coastal waters in regards of national and international legislation has been carried out to investigate the potential of existing coastal observatories to develop into observatories of biodiversity and to define interfaces with a future marine biodiversity network. Three types of potential strategies have been identified for JERICO: implementation of one or a few specific biodiversity related sensing techniques in existing and foreseen infrastructure of platforms to describe boundaries using semi-automated imaging techniques and passive acoustics, and promising genetic markers have been identified to have potentials for the future, linking JERICO to existing or developing pan-European initiatives of biodiversity observation and tune mutual activities (in terms of space and time resolutions) or finalize cooperation with initiatives such as EMBOS, ICES, and through optimization of biochemical sensors already present in the network to deliver explaining – or model parameters for biodiversity. The deliverable 1.9 “Proposed strategy for biodiversity” has been submitted in April 2014.

Task 1.5 Roadmap for the future
The task 1.5 has started since month 24. Dedicated workshops on the future strategy are the first step towards the definition of the Roadmap for the future. Two dedicated workshops have been held in Villefranche in October 2013 and in Brussels in March 2014. The Roadmap for the future will present key-environmental parameters which are measured in European coastal waters (primary and secondary parameters) and will identify emerging key-environmental parameters to be measured in European coastal waters. Sampling requirements in space and time will be proposed to address the needs of both the implementation of the EC Directives and the operational need of in situ data from the GMES marine services and to describe and quantify the ecosystems for understanding the dynamics, assessing the state and predicting natural and/or human induced changes. This task benefits from the inputs of the deliverables of the workpackages 2, 3 and 4. The deliverable is planned to be delivered at the end of the project.

Task 1.6 User modality access for the TNA
Two further calls were launched (2nd Call: January 14, 2013, 3rd Call: September 19, 2013).
2nd Call closed on March 27, 2013. Six proposals were received, five of them were approved.
3rd Call closed on November 25, 2013. Five proposals were received, all were approved.
We also received requests of extension of access period from CALL_1_6 and CALL_1_9, approved by the Selection Panel.
Following the procedure discussed at the First TNA Selection Panel meeting in Iraklion (October 1, 2012), the evaluation procedure was modified: proposals have been first validated by the manager of the targeted facility (feasibility assessment) and then evaluated by the Selection Panel. A Selection Panel meeting was held in Brussels on February 26, 2014 during which all the actions of the two last calls made by email were formally ratified.
Calls were widely publicized (Partners’ webpages: CNR DTA and ISMAR, CEFAS, MI, IBW PAN, IMR, Puertos del Estado; other projects and organizations’ webpages: Euroris-net, Euroceans; mailing lists: EUROFLEETS, PERSEUS, Marine Ripple Effect, MONGOOS, NEXOS).

TNA webpages were updated for the 2nd TNA Call (revision of selection procedure, text of 2nd Call, descriptions of available facilities) and the 3rd Call (call text and description of available facilities) and integrated with information on submitted and approved projects. These webpages are constantly updated including information on the on-going experiments in form of web-articles and summary of main results (project reports, presentations to conferences and publication in peer-reviewed papers).
Totally the three TNA Calls received 24 proposals, 20 of them were approved and 19 were scheduled. At present 6 of the approved projects have been concluded (reference numbers: CALL_1_4, CALL_1_5, CALL_1_7, CALL_1_8, CALL_1_11, and CALL_1_13), 6 of them are ongoing (reference numbers: CALL_1_1 started on 3 March 2013, CALL_1_6 started on 1 July 2013; CALL_1_9 started on 20 November 2012; CALL_2_1 started on 18 October 2013; CALL_2_2 and CALL_2_5 started in April 2014). The remaining 7 projects are starting and will be concluded in autumn 2014.

- · ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative person-months *	Used indicative person-months *	Lead contractor
D1.1	First call for TNA proposals	1	M8	Submitted M9	5	6.75	CNR
D1.2	Definitions for a common strategy	1	M9	Submitted M21	6	2	INSU/CNRS
D1.3	Terms of reference of the FCT	1	M9	Submitted M14	3	1	MI
D1.4	Label definition	1	M18	Submitted M38	2	4	HCMR
D1.5	Second call for TNA proposals	1	M20	Submitted M21	5	3.5	CNR
D1.6	First report of the FCT activity	1	M24	submitted M27	3	3	MI
D1.7	First report of the access activity	1	M24	Submitted M25	5	6	CNR
D1.8	Second report of the FCT activity	1	M36	M40	3	0	IFREMER
D1.9	Proposed strategy for biodiversity	1	M36	Submitted M38	4	0	NIOZ
D1.10	Second report of the access activity	1	M42	M42	5	0	CNR
D1.11	Final report	1	M48	M48			INSU/CNRS

- · ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS5	First steering committee outputs	WP1	M9	Achieved M9	Ifremer
MS6	Infrastructure available for users (TNA)	WP1	M11	Achieved M9	CNR
MS7	First forum for coastal technology	WP1	M18	Achieved M18	MI
MS8	Second steering committee outputs	WP1	M18	Achieved M18	Ifremer
MS9	Third steering committee outputs	WP1	M27	Achieved M25	Ifremer
MS10	Second forum for coastal technology	WP1	M30	Achieved M35	MI
MS11	Fourth steering committee outputs	WP1	M36	Achieved M37	Ifremer
MS12	Fifth steering committee outputs	WP1	M45	M45	Ifremer
MS13	User reports of activities	WP1	M47	M47	CNR
MS14	Roadmap for the future	WP1	M48	M48	Ifremer INSU/CNRS

- ***2.1.2 Deviations from the project work programme, and corrective actions taken***

The main deviation is about the definition of the Jerico Label.
The task is much more difficult that we expected at the beginning of the project. We decided to create a dedicated working group, whom will organise meetings and workshops, in order to be sure to have a realistic an applicable document at the end of 2013.

• 2.2 WP 2 – STRENGTHENING REGIONAL AND TRANS-REGIONAL ACTIVITIES

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• *2.2.1 Progress towards objectives – tasks worked on and achievements made*

Task 2.1: State of the Art in Coastal observing systems

The focal point of work within the period was laid on the delivery of the planned deliverables D.2.1-D.2.3. All deliverables were delivered and the main focus of the next phase will be on the delivery of d2.5
The main aim for the first deliverable D.2.1 namely the report on existing observation networks were to provide a review of the present status of the observation systems integrating the activies ongoing in the different regional Alliances of the European Global Ocean observing system (EuroGOOS).

Part of this integrative approach is the observational systems implemented within the EuroGOOS regional alliances for the European waters. Over the last years several European wide projects has been conducted to integrate the in Situ observations towards a system that can serve all the need from the different users. Based on the EuroGOOS ROOSes these different projects such as actual the MyOcean for mostly Realtime data and the SeaDataNet for historical data are complemented by programmes like EMODnet.
The main aim for this report has been to provide an overview of the existing observational systems provided by the regional Alliances i.e. the Arctic ROOS, NOOS, BOOS, IBIROOS, MONGOOS and Black Sea GOOS.
The main aim for deliverable D.2.2 namely the report on recommendations for future research and development for filling gaps in observations was to provide an overview of the main challenges the existing observational systems are facing to provide an integrated status of the marine environment and to identify knowledge gaps, that are recommended to fill within the upcoming years.

An analysis has made with respect to developments in science and technology and future user needs at policy and operational (commercial) level in order to comment on the future research, gaps between present observational systems and user requirements

These recommendations are contributing to the roadmap for the improvement of an European Marine infrastructure based on components at National and International level and a shared vision on an sustainable Regional basin wide integrated network and a common strategy to reach this at European level in an accessible and inter-operable way..

The JERICO-consortium represents the institutes, which have national responsibilities for operating and maintaining existing in situ monitoring networks as well as development of efficient data gathering to fulfil future information needs.
The main findings are summarised here and the report provide a more detailed description.
Common elements of the analysis from the overview of the Regional alliances (ROOS) leads to central issues gathered under Nutrients, Physical oceanology, Phytoplankton and zooplankton. More regional specific:

- Attention to functioning of present Artic Ocean ecosystem and with respect to climate change and expected change in productivity, human activities (Artic region)
- Attention to fresh water inflow and validation of forecasting models; sustainability of existing observational system and development towards to eco-system approach and MSFD-indicator needs and assessments (North Sea Region).
- Attention for the monitoring the climate variability, improvement of LT stability for T&S and oxygen along the water column (Baltic Sea Region)
- Attention to growth, and impact from extraction use of natural marine resources (Atlantic front of Europe IBIROOS–region)
- Attention to lack of data from African Coast, NRT biochemical data and integration of gliders in the common vision of the Mediterranean observations (Mediterranean Sea-MONGOOS)
- Attention to the overall lack of observation continues monitoring programs and system behavior studies. Building and maintaining a Basin scale in situ observing system based on best practices in other Regions has key priority (Black Sea GOOS region).

As results the focus can be Integration: Coastal observational systems are designed at National level based on state of the art in technology and knowledge of the coastal and marine processes.
A mechanism for international ‘agreements’ how these coastal observatories can be accepted as a node in an integrated system or a chain of systems at basis scale (ROOS-level) will create homogeneity and ease access to basin wide information. Relevant aspects are: long term perspective as data source, inter-operability,…

The third main effort undertaken within the Task 2.1 was the compilation of the pan European atlas of existing observing systems. This action is limited for the moment to stations delivering Temperature, Salinity and Sealevel observations. The additional parameters are aimed to be added within the Deliverable D2-5 scheduled for the end of the project.

Task 2.2 Cross regional integration and demonstration

The main aim for the deliverable D2.4 namely the report on the demonstration of the feasibility of the trans-regional product production on transport as well as on E-HYPE were to provide evidence of the feasibility of trans-regional product production aiming to develop these products for the transport of Water masses and as well for the River runoff provided by the EHYPE model. This deliverable summarises the development and setup of an operational hydrological forecast tool for delivering high-resolution real-time and forecast fluxes of water and nutrients to European Seas and demonstrates a possible approach to a pan-European transport product. The deliverable has been submitted in Month 25.
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- · ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative person-months *)	Used indicative person-months *)	Lead contractor
D2.1	Report on existing observation network	2	M12	M21	6	No new numbers	IMR
D2.2	Report on recommendations	2	M12	Postponed to M25 Submitted M26	6	No new numbers	IMR
D2.3	Integrated Pan European Atlas first report	2	M18	Postponed to M26 Submitted M29	6	No new numbers	IMR
D2.4	Demonstration of the feasibility of Joint transregional production	2	M24	Postponed to M25 Submitted M26	9	No new numbers	SMHI
D2.5	Integrated Pan European Atlas / second report	2	M48	M48	6,25	0	IMR

- · ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS27	Report on activities	WP2	M42	M42	IMR

2.2.2 Deviations from the project work programme, and corrective actions taken

With the delivery of the Deliverables D2.1-D2.4, the Workpackage is back on the planned schedule.

• 2.3 WP 3 – HARMONIZING TECHNOLOGICAL ASPECTS

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• *2.3.1 Progress towards objectives – tasks worked on and achievements made*

The FerryBox activities (Task 3.1) started first and later on with investigations on fixed platforms and gliders. Main focus was on collection of all the available information within the JERICO community regarding the different platforms in use and their technical equipment mainly done by questionnaires. On common workshops shared with WP4, the experiences of operation of these platforms were exchanged in order to work out best practices recommendations. The first three workshops were dedicated to the three different platforms. As the first three workshops in the period until month 18 were dedicated to the three different platforms, a fourth workshop was organized on best practices for all platforms with focus on common measured parameters and exchange of experiences with different type of sensors following the General Assembly in Crete in October 2012. During that meeting working groups for the three platforms were established to elaborate further details of such recommendation for best practice at the different platforms.

Task 3.1 FerryBox

Progress and achievements:

Current status has been reviewed and reported in deliverable D3.1 (Report on current status of FerryBox). The report provides:

1. A review of the present status of the 16 Ferrybox systems currently operated by JERICO partners.

Access to detailed information on the Ferrybox systems on line at the FerryBox project web site (www.ferrybox.org) at the link

http://www.ferrybox.org/routes/northern_europe/index.html.en.

The table with the information of all platforms (Excel sheet) will be updated regularly at least once a year. The last update was from February 2014. The tables are available both on the webpage of the FerryBox community (www.ferrybox.org) and on the JERICO homepage.

2. A set of recommendations and guidance for setting up a new Ferrybox system, based on the experience of the current status of the operation of Ferrybox systems.

Next steps are considered in an overview of potential advances resulting from the work of the JERICO project.

3. Part of the JERICO vision is the improved harmonisation of activities through sharing of information and standardisation of operating procedures connecting operations at sea and generation of real time data through to the archiving of fully quality controlled and documented data sets. Items following on from the 1st JERICO Workshop are discussed.

4. Ferrybox information is being used to review the current status of and best technical practice for operating Ferrybox systems as part of JERICO work packages WP4 (Harmonizing Operation and Maintenance Methods) and WP5 (Data Management and Distribution). For example, delayed-mode Ferrybox data activities will be routed through WP Task 5.2. This task will also manage the necessary interaction between JERICO and SeaDataNet II. JERICO needs to think how this will be developed in practice across the different user groups and the training required.

5. A task of the JERICO meeting in Crete (October 2012) should be to define a "roadmap" for fully developing the links between MyOcean and the potential providers of near real time data from Ferryboxes that are useful in the context of the activities of MyOcean.

Best technical practice has been also discussed more specifically in two FB workshops as well as in the common workshop for all platforms in Crete in October 2012. A working group has been established for developing recommendations of best practice from installation to operation and maintenance for FerryBox systems (lead NIVA). Further meetings were organized during the FerryBox workshop from the FerryBox community in Helsinki (April 2013) and a further meeting will be held at general assembly in Oslo (May 2014).

The main topics of the workshop in Helsinki have been as follows:

- Best practice for FerryBox systems (Part of deliverable D4.4) with the focus on discussion to clarify how objectives will be distributed on different deliverables.
- FerryBox data handling in form of FerryBox data quality control algorithm in MyOcean, FerryBox data QA (Task 10.5) and FB data management system.
- Short status update of development of new physico-chemical sensors (Task 10.2).
- Status of JERICO User Display (JUD) (Task 6.1.3).
- Preliminary discussion on the COST project & use of FBs as MFSD observatory.

Tests of the operation of new sensors within FerryBox systems were performed on research cruises or were already integrated in some FerryBox systems. The description of these actions will be the main objective of JERICO deliverable D3.4. The structure of sensor presentation, adopted from GROOM report, will be

- Scientific relevance
- Applied methods
- Implementation on platform
- Data quality control
- Outlook for possible improvements

For the following parameter new developed sensors will be described:

- Phytoplankton (Chlorophyll-a, phycocyanin fluorescence)
- pH
- Total Alkalinity
- pCO_2
- Passive Sampler

There has been considerable development of new sensors that measure components of the carbonate system, thus research addressing ocean acidification and eutrophication will benefit from this progress. Especially, new sensors for pH monitoring are established on FerryBox routes. They provide better accuracy, higher salinity range (important for Baltic Sea monitoring) and more compact designs for easier installation on autonomous systems. Also, a new generation of pCO_2 sensors has been described.
Until lately, the Total Alkalinity has not been measured autonomously but more often has been calculated from other components of the carbonate cycle. It will be soon possible to measure the Total Alkalinity directly with the described device which can be easily combined with pH measurement devices.

The detailed description of these tests and experiences with new sensors will be documented in deliverable D3.4.

First discussion on common procedures for validation of earth observation data (e.g. chlorophyll-a) started in the best practice workshop.

Task 3.2 Gliders

Progress and achievements:
The activities within this task were closely coordinated with the EU project GROOM (Gliders for Research, Ocean Observation and Management) which has been started in October 2011. The deliverable D-3.2 (Report on current status of gliders observatories within Europe) was postponed from M15 to M24 in order to facilitate coordination with the GROOM project and to avoid any unnecessary duplication of efforts. The final version was delivered in May 2013.

The report describes the current status of glider observatories in Europe with details for each country including an overview about performed glider missions so far as well as issues of planning of glider missions and glider and sensor maintenance.

The D3.2 is structured in four main sections:

- Introduction to European Glider Observatories: in terms of staff, glider fleet, sensors and vehicles available.
- Operational activity analysis: overview of missions undertaken in 2010 and 2011 (zones of presence, typology and driving objectives); key findings obtained with gliders; and how these missions were supported in terms of (a) planning, (b) prevention, (c) piloting and (d) scientific calibration, amongst others.
- Data management strategies: review of the current situation followed by three representative examples of processing systems and discussion including a specific proposal for glider data management in Europe;

- Compilation of costs related to the glider activity: quantification of the personnel; the operations; the investments derived from the purchase of gliders and related goods (in coordination with WP4).

The report is based on the information collected from an extensive questionnaire that was prepared by the JERICO glider team during 2011-2012, the discussions that took place in the glider meeting in Mallorca in May 2012 and the discussions and iterations that continued after the meeting and during 2013.
This report reflects the present status of glider operation in Europe and is mostly centered on infrastructures, operations, data management and costs. Besides different origins and drivers in the different teams, there are evidences of an evolution towards similar approaches to common infrastructure and operation procedures.
With respect to infrastructures, human resources seem to be limited when compared with the size of the fleets to be managed. Considering that the intentions of fleet growth are close to 25%, fully dedicated personnel will be needed to sustain the number of missions planned in forthcoming years. Additionally, there is a good pool of hydrographic and biological sensors, although higher variety could be interesting to increase the potential of a near future European glider fleet.
The level of maturity and experience of the different European glider observatories offer a valuable asset for establishing a European multidisciplinary multi-platform ocean observing network to provide coastal data inputs for operational ocean observing and forecasting, and also to answer some of the needs of the environmental research and societal communities.

In deliverable D3.4, an overview of sensor developments for deployment on gliders will be given. Gliders are much more restrictive concerning energy and space availability than FerryBoxes and Fixed Platforms. However, with new technologies, these restrictions have been overcome. So, a variety of new sensors have been developed and already tested in recent years. Only a short overview will be presented in the report, as more details can be found in the report of project GROOM of year 2013. The structure of presentation has been shortened into 5 columns (parameter, sensor, method, implementation, quality control) as compared to the structure described above.
The sensor developments for gliders could be divided in two groups, i.e. sensors in pre-operational mode which are mainly mission-proved. The other group consists of developments which are not yet tested on gliders. In the second group, however, all requirements for a successful deployment are fulfilled.

Task 3.3 Fixed Platforms

Progress and achievements:

On the basis of a questionnaire together with information from the EDIOS database and the EMODnet physical portal (http://www.emodnet-physics.eu/portal/), a database of all fixed platforms within Europe including a lot of metadata has been set up. The database includes over 900 fixed platforms. The measuring sites were mapped by region (using the NOOS, BOOS, IBI-ROOS and MOON regions), and by country. A very wide variety of instruments and platform types are in use at these sites. On the basis of this database, a report about all fixed platforms within Europe (deliverable D-3.3 "Review of current marine fixed instrumentation") has been written. The final version was delivered in Aug 2013.

This JERICO report describes the current status of fixed platform observing systems in the seas around Europe. Fixed platform or eulerian observatories are fixed with respect to their position on or above the seafloor - they may be part of a coastal feature such as a pier or jetty, or they may be located offshore.
These platforms host different types of sensors for making measurements of the water, marine life or contaminants. The location of sensors on the seabed or throughout the water column provides an important capability to sense large parts of the ocean which are not detectable from the surface. This

report is intended as a guide to promote sharing of information and best practices, and it can also be used as a mapping tool to identify gaps in the existing data collection system.

The report clusters a collection of similar measurements (often made by the same institute) as a distinct system. According to this classification, Europe has 80 identifiable marine observing systems. Systems have an average of 11 nodes or measuring stations. The observing systems are predominantly located in the shallow coastal zone where the seabed is less than 50 m deep. 33 (39%) of the 80 systems belong to organizations who are partners in the JERICO project.
A number of stations were recorded as holding multiple sensors, and there are even examples of stations which simultaneously record biological, chemical and physical parameters. If observations at these stations could be sustained, then they will make a very important contribution to the global marine observing network. Certain maps form this report can be downloaded from the JERICO website.

The database of fixed platforms will provide opportunities for collaboration within the JERICO project, and improving best practices among the community. It will facilitate a move away from smaller systems often focussed on one site and associated with one individual, to a more efficient net-centric, distributed system which eliminates duplication and allows common tasks to be shared among many partners.

Best practice for fixed platforms is intensively discussed on the fixed platform workshop in Rome as well as on the common workshop in Crete. A working group has been established for developing recommendations on best practice for fixed platforms (lead ACTI).
Deliverable D3.4, which has been mentioned in the previous two paragraphs, addresses also sensor developments which are designed for use on fixed platforms. Due to their eulerian form of observation, fixed platforms provide a high temporal resolution of measurements for coastal positions and they are able to carry a higher load of sensors than e.g. floats. Thus, they are capable of accommodating spacious observing systems such as passive samplers, which also can be deployed on FerryBox systems.
As for sensors on FerryBox systems, the presentation structure will be applied also to fixed platform sensors. These sensor types will be described:

- Wipers for the Aanderaa optode, Seapoint Chl and OBS and Licor PAR
- Fish detection echo sounder

- · ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative person-months *)	Used indicative person-months *)	Lead contractor
D3.1	Report on current status of FerryBox	3	M9	Submitted M17	20	12	HZG/NOCS
D3.2	Report on current status of gliders observatories within Europe	3	M15	Submitted M24	20	1	CSIC
D3.3	Review of current marine fixed instrumentation	3	M21	Submitted M28	20	5	HZG/CEFAS

D3.4	Report on new sensor developments	3	M36	Submitted M39	24.7	1	HZG
D3.5	Conclusion report	3	M42	M42	20	0	HZG

- · ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS28	Report on activities	WP3	M42	M42	HZG

- ***2.3.2 Deviations from the project work programme, and corrective actions taken***

The deliverable D-3.2 (Report on current status of gliders observatories within Europe, delivery date M15) has been postponed to M24 in order to synchronize the work with the activities in the GROOM project. The deliverable D-3.3 (Review of current marine fixed instrumentation, due M21) planned for M21 were delayed as it turned out that especially the review on fixed platforms needed a lot of effort both due to the high number of operators as well as platforms and the heterogeneity of the systems and difficulties of getting metadata. The report was finally delivered in August 2013 (M28). The deliverable D3.4 (Report on new sensor developments) is already in progress, there is some need for clarification and coordination with WP 10, deliverable D10.4. The final version will be delivered in June 2014 (M38).

• 2.4 WP 4 – HARMONIZING OPERATION AND MAINTENANCE METHODS

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Work package leaders' name: George Petihakis

• *2.4.1 Progress towards objectives – tasks worked on and achievements made*

During the second 18th month reporting period (Nov. 2012 – April 2014) work on the first two tasks moved to the analysis level while significant effort was directed towards Task 3 End to end quality assurance. The common with the other WP's (WP3 & WP10) workshops/exercises continued, acknowledging their value.

WORKSHOPS

Date	Title	Location
23rd April 2013	WP3 & WP4 status workshop	SYKE, Helsinki
13th March 2014	Dissolved Oxygen calibration / What are the best procedures? An interactive workshop to identify the best practices about dissolved oxygen calibration procedure.	FCT, Oceanology 2014, London

EXERCISES

Date	Title	Coordinator	Participants
June 2013 – up to now.	Biofouling Monitoring Program (BMP)	ISMAR-CNR	IFREMER, CEFAS, HCMR, AZTI, SMHI,SYKE
Sept-Oct 2013	Intercomparison of O2 sensors in situ and in lab	CNRS, Villefrance	CNRS, CNR, HCMR

Task 4.1 Calibration

As mentioned in the first 18 month report, following the Heraklion workshop the second calibration exercise/workshop took place at IFREMER facilities in Brest (8-12 October 2012) in parallel with the SeaTechWeek event. The aim was to compare the calibration methods used by each laboratory by organizing an inter-laboratory comparison. Four partners participated with six different sensors.

During this second period of reporting a COST action proposal was prepared and submitted twice (the first time was unsuccessful, the second attempt is under evaluation) for the JERICO calibration labs in accordance with the milestone MS15.

The JERICO web page was populated with calibration manuals. This work is on-going.

There are two deliverables in the first task both of them completed within this reporting period. Although the deliverables are available in the project's website a brief overview is presented here. More detailed:

Deliverable	Responsible	Month	Date Due	Status
D4.1 Report on Existing Calibration Facilities	**HZG**	**18**	**October 2012**	**Done**

The objectives of the deliverable are to:

- Describe the general aspects of calibration systems with reference to:
  - Budget for calibration
  - Calibration staff
  - Quality management, control charts, links and collaboration with other institutes

- Evaluate sensor calibration specifications for
  - Physical sensors
  - Optical sensors
  - Chemical sensors

For the first objective as mentioned in the first reporting period the evaluation of the overall constitution of the calibration facilities was done through a questionnaire and the main aspects were:

★ Calibration staff
★ Funding for calibration
★ General guidelines for operation of calibration facilities (quality management, accreditation, quality sheets, archives etc.
★ Links and collaboration with other institutes

For the second objective that of Evaluation of sensor calibration specifications which is a type dependant the following general outcomes emanated from the analysis:

Physical sensors:

- Routine calibration every 6 or 12 months

- Effective traceability chain for temperature calibration
- Highest potential for improving with internal and independent quality audits (valid for T & S sensors)

Optical sensors:

- Effective traceability chain for the specified parameter (5 out of 6 institutes)
- Most institutes perform field calibration for turbidity sensors and the majority also archive their calibration reports and certificates
- Calibration intervals depend strongly on applied sensor
- Agreement about room for improvement. Most institutes do not perform internal and independent quality audits for optical sensors

Chemical sensors:

- Most do field calibration and maintain manuals of calibration methods and procedures
- Roughly same calibration interval as for optical or physical sensor is applied
- Deficits lay on the realization of independent quality audits

The second deliverable has been delayed for one month taking advantage of the GA meeting in OSLO as an opportunity to discuss further more the various aspects between the partners.

Deliverable	Responsible	Month	Date Due	Status
D4.2 Report on Calibration Best Practices	**HZG**	**36**	**April 2014**	**Done**

Briefly the Documentation of best practises for sensor calibration is divided into four categories:

- **Physical sensors**: Temperature and Conductivity (Salinity)
- **Optical sensors**: Chlorophyll and Turbidity
- **Chemical sensors**: Nutrients (Nitrate, Phosphate, Silicate, Ammonium)
- **Oxygen sensors**

Information of best practise are gathered and analysed to **new calibration strategies** to **improve the performance and efficiency** of oceanographic measurements of **different sensor types** in the future.

Some aspects for best practises of calibration for **temperature and conductivity sensors** are:

- Marine T and C sensors cannot be calibrated in the field; field checks serve, at best, to monitor the effective operating characteristics of the sensors.
- Marine T and C sensors require regular, often frequent, calibrations because their performances tend to vary over time and can be affected by the specific conditions of usage.
- The reference measuring systems must be maintained to within declared specifications by monitoring their performances regularly, and scheduling servicing with a manufacturer immediately when laboratory quality assurance procedures indicate a developing problem.
- The results of a calibration may or may not be accredited but they must always be accompanied by the following:
    - A declaration of the uncertainty associated with the calibration process;
    - Information evidencing traceability to reference material (certified or otherwise): ITS-90 fixed points for temperature and IAPSO Standard Seawater for conductivity.

Some aspects for best practises of calibration for **optical sensors** are:

- Chlorophyll-a (Chla) fluorescence used as a proxy of Chla concentration for decades → validation of the fluorescence signal with analytical [Chla] measurements using field samples
- The readings from different fluorometer models are never directly comparable, and the conversion factors cannot be determined as the major cause for the difference is the unknown spectral variability in samples.
- Unfortunately there exist no generally accepted method for fluorometer calibration and also manufacturers have different conventions. Various solutions for primary fluorometer calibration include:
    - factory calibration,
    - use of algae cultures,
    - chemical standards dissolved in water or in various solvents
    - solid standards.

Some aspects for best practises of calibration for **chemical sensors** are:

- Preparing of standard solutions
- Storage and handling of reagents
- Bottle samples and laboratory analysis
- Specifications of nutrient sensor calibration:
    - Nitrate: UV and Cadmium method, reduction capacity has to be checked regularly
    - Silicate measurements with ion exchanger, stability of cartridge has to be checked regularly
    - Ammonium measured with three different alkaline methods, especially careful handling of probes due to low concentrations

Some aspects for best practises of calibration for **oxygen sensors** are:

- Reference measurements: Winkler titration (developed 1888, further improved since then)
- Dissolved oxygen facility aspects
- Calibration protocol
- Adjustment process

As mentioned above on the 13th of March 2014 an interactive workshop was organised by WP4 and WP10 with the aim to identify the best practices of dissolved oxygen calibration procedures in the framework of Forum for Coastal Technology (FCT) during the Oceanology Exhibition in London. It was the first time that the user community (marine operators) came together with the manufacturers (SBE, AADII, RINCO, CONTROS) and had the chance to discuss and analyse related issues such as operation, maintenance and calibration best practices. The outcomes of the successful meeting will be reported elsewhere in the FCT report.

Taking into account that it is the first time that the marine calibration community is brought together and analysed, the results are of particular importance in guiding the future activities. Thus the outcomes of the above two deliverable are of particular value.

Task 4.2 Bio fouling prevention

There is one deliverable in the second task completed within this reporting period with one month delay however since it proved to be necessary to have the view of the partners involved during the GA in Oslo. Although the deliverables are available in the project's website a brief overview is presented here. More detailed:

Deliverable	Responsible	Month	Date Due	Status
D4.3 Report on Biofouling Prevention Methods	**CNR**	**36**	**April 2014**	**Done**

The major tool towards the accomplishment of this deliverable was a questionnaire distributed to the partners. During the common WP3&WP4 workshop in Heraklion on the 4th & 5th of October it was decided to update the biofouling questionnaire with some important questions which were missed. This was done and the partner's responses were accommodated in the overall analysis. Since the details will be presented in the corresponding deliverable, here only a brief description is given:

The deliverable structure is:

- Introduction
- The biofouling problem and antifouling techniques – a literature review
- Review Approaches adopted by the wide community including novel approaches – a literature review
- Practices in JERICO (Section 4, p. 36-55) - Results from the survey circulated among partners
- Conclusion
- Final remarks and recommendations
- References
- Appendix: the Biofouling Monitoring Program

As a general statement one may say that there are no fresh-new solution, no major innovation to existing technologies (but research is going on to optimize the existing, e.g. NeXOS project). At present, the most promising innovation seems to be the "biomimetic approach": design of novel antifouling non-toxic materials based on the intrinsic natural ability of marine organisms to resist to biofouling. This self-cleaning of antifouling natural surfaces can be used as model for new approaches aimed at limiting biological growth on man-made structures.

Furthermore it seems that this biological phenomenon is not examined in depth during/after deployment of sensors, even though a better knowledge could help to choose a more effective antifouling approach, with consequent return in costs optimization and quality of data. The Biofouling Monitoring Program carried out within JERICO and mentioned below can help to shed light.

During the common workshops in Rome (29 Feb – 1 March 2012) and in Heraklion (4th & 5th of October) it was decided to perform a common bio fouling experiment where selected partner sites will act as a test bed. There has been significant progress towards this and Dr. Marco Faimali (CNR) who is coordinating the task has finished the design of the biofouling plates and the order was completed. Following the plates were distributed to the partners and successfully placed in the predefined platforms. This is an on going activity.

Task 4.3 End to end quality assurance

The objectives of the task are summarised in:

- To describe best practices in all phases of the system (pre-deployment test, maintenance, calibration etc)
- To adopt common methodologies and protocols
- Move towards the harmonisation of equipment, which will help in reducing maintenance and calibration costs

Towards these objectives a platform dependant approach was chosen. One of the decisions during the Heraklion workshop (previous reporting period) was:

- To produce a white paper for oxygen sensors. This has been completed and is available on the JERICO website.

- To form small working groups elaborating the main issues and recommendations concerning End-to-End best practice for FerryBox and Fixed Platforms

    - ➢ The group for the Fixed Platforms is:
        - Carlos Hernandez (AZTI) - coordinator·
        - Detlev Machoczek (BSH)
        - Yannick Aoustin (IFREMER)
        - Dave Sivyer (CEFAS)

In the presentations of the European fixed platforms, Network during the 2012 meetings, some partners explained their own operational protocols and pointed out solutions for common operational problems. After having collected all this information, due to the wide variety of platforms, we have identified that it is necessary to establish some common operating procedures. One of the key issues related to the fixed platforms is the huge variability.

The basic parts of the deliverable related to the Fixed Platforms are:

Design	***Operation***
Platform objectives	Solutions to operational problems
Geographical location	Maintenance
Facilities	Calibration
Suppliers	Data management
Future upgrades	

- ➢ The group for the FerryBox is:
    - Kai Sörensen (NIVA)-coordinator
    - Wilhelm Petersen (HZG)
    - Mark Hartman (NERC)
    - David Hydes (NOC)
    - Pascal Morin (CNRS)
    - Manolis Ntoumas (HCMR)

- Seppo Kaitala (SYKE)
- Malin Mohlin (SMHI)·

The working group for the FerryBox presented a fisrt draft during the Alg@l Meeting in SYKE (23rd April 2013). The basic parts of the deliverable structure is:

Ferrybox Technologies	***Ferrybox Infrastructure installation and planning***
Commercial FB-systems (HZG)	Shipping company
Sensor available for Ferrybox installations (SYKE, HZG)	Ship type
Other instrumentation used in Ferrybox	Ship route
	Ship Regulations
Ferrybox system maintenance and calibration	Working Space
System maintenance	Water Inlet
Sensor maintenance (HZG, NIVA)	Pump
Sensors and instruments calibration and QA (SYKE, NIVA)	Types and dimensions of water supply lines
	Include Servicing in Design
Ferrybox Data Management (NIVA and HZG, ALL)	Valves
Real Time & Delay Mode	Choice of System
Data Processing and Quality Control (real time and delayed)	Dimensions of Pipes
Data Archiving (National and international databases)	Electrical Considerations
	Regulations
	Onboard Routines
	UPS
	Power Consumption
	Computers, Internet, Satellite connection

Regarding the gliders the structure of the deliverable includes the following:

Glider Technologies	***Glider Infrastructure***
Slocum Glider	Laboratory
Seaglider	Ballast tank
Spray	Pressure chamber
Others	Calibration
	Storage
Glider Platforms in the Laboratory	Communications
Platform maintenance	Control room
Sensor maintenance	Data Center
Sensors and instruments calibration	Vehicles

	Vessels
Glider Missions	Others
Planning	Laboratory
Definition	
Deployment Techniques	***Glider Data Management***
Recovery Techniques	Glider Data Retrieval (Real Time & Delay Mode)
Piloting	Glider Data Archiving
General safety	Data Processing and Quality Control
Glider Data Dissemination and Outreach	***Training Materials, Courses and more Information***
Glider Cost Analysis	

Towards the third objective of this task "**Move towards the harmonisation of equipment, which will help in reducing maintenance and calibration costs. For this inter calibration tests and in-situ validation will be organised"** a questionnaire was prepared and sent to partners by CEFAS. Responses are under evaluation and a preliminary analysis is given below.

For the gliders the Questionnaire designed in Feb 2012 at Rome workshop and modified in discussions with GROOM participants during the joint JERICO/GROOM – EGO Glider Workshop held 22-23 May 2012 in Mallorca. Glider running costs reviewed within the "Report on current status of glider observatories within Europe", JERICO deliverable 3.2

For the Fixed Platforms and Ferry Boxes Questionnaire was sent to all JERICO task 4.3 participants and categories were grouped together to closely match those of the glider analysis. The complexity of platforms varies between institutes (e.g. T & S, biogeochemcial sensors, CO_2) - therefore there were very different costs between institutes. The level of detail provided in questionnaires depends on how institutes track costs.

In summary the following preliminary outcomes are outcomes from the analysis:

- ➔ *Similar average initial investment for in situ platforms and Ferrybox systems*
- ➔ *Similar average annual running costs for in situ platforms and Ferrybox systems*

For in situ platforms:

- ➔ Variable operations account for more than half of the average annual running costs
- ➔ Boat hire is a significant cost in the variable operations (67%)

For Ferrybox systems:

- ➔ Personnel costs account for more than half of the average annual running costs

- · ***Deliverables***

The deliverables scheduled in the framework of WP4 are listed below. The ones in green are those completed while the last two will be completed and reported in the next period.

Del. no.	Deliverable name	WP n°	Delivery date from DOW	Actual/Forecast delivery date	Estimated indicative person-months	Used indicative person-months	Lead benificiary
D4.1	Report on existing facilities	4	M18	M20	10.00	5.00	HZG
D4.2	Report on calibration best practices	4	M36	M38	20.00	5.00	HZG
D4.3	"Report on biofouling prevention methods	4	M36	M38	20.00	5.00	CNR
D4.4	"Report on best practice in operation and maintainin g	4	M42	M42	20.00	4.30	HCMR
D4.5	Report on running costs of observing systems	4	M48	M48	14.50	2.70	CEFAS

- · ***Milestones list***

Significant steps have made towards the milestone. As mentioned above a COST proposal has been prepared and submitted twice (the first attempt was unsuccessful). Irrespectively of the outcome of the second attempt, JERICO has acted as the vehicle to bring together for the first time the marine calibration community. It is also very important that related activities will be included in the JERICO NEXT proposal.

MS. no.	Milestones name	WP n°	Delivery date from DOW	Actual/Forecast achievement date	Lead contractor	Achieved Yes/No	Comments

MS 15	Constitution of a permanent Working Group within JERICO for Calibration Activities	4	M30	M42	HCMR	NO	

- ***2.4.2 Deviations from the project work programme, and corrective actions taken***

The deliverable **D4.1 - Report on existing facilities with the capacity to handle pressure, temperature, salinity and dissolved oxygen calibrations amongst the active coastal observing networks** planned for M18, (October 2013) and was delayed it was delivered in January 2013.

The deliverable **D4.2 - Report on calibration best practices** planned for M36 (April 2014) it was delivered with a two-month delay as input from the partners during the GA in Oslo was important.

The deliverable **D4.3 - Report on biofouling prevention methods** planned for M36 (April 2014) it was delivered with a two-month delay as input from the partners during the GA in Oslo was important.

• 2.5 WP5 – DATA MANAGEMENT AND DISTRIBUTION

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• *2.5.1 Progress towards objectives – tasks worked on and achievements made*

Task 5.1 Create value for measured data

The reference document "Guidelines for Uncertainty" constituting deliverable D5.4 was prepared and submitted to the Coordinator. D5.4 presents the essential principles and concepts central to the determination of measurement uncertainty. It describes the different steps involved in an uncertainty calculation, introduces reporting conventions, provides guidance on the proper preparation of relevant documentation, and outlines the importance of uncertainty determinations in the context of coastal marine observing activity (Table 1). Work on D5.5, the "Report on uncertainty for selected key parameters: temperature, salinity and chlorophyll-a", the last deliverable relating to this task, is ongoing.

Table 1. The contents of deliverable D5.4, the document "Guidelines for Uncertainty".

1. DOCUMENT DESCRIPTION
2. EXECUTIVE SUMMARY
3. INTRODUCTION
4. MAIN REPORT

4.1. Some useful elementary concepts

4.2. Measurement and uncertainty
- 4.2.1 What is (and is not) a measurement?
- 4.2.2 What is measurement uncertainty?
- 4.2.3 Error, accuracy and precision versus uncertainty
- 4.2.4 Sources of uncertainty

4.3. Determining uncertainty
- 4.3.1 Defining the measurand
- 4.3.2 Designating the sources of uncertainty
- 4.3.3 Quantifying the uncertainty components
- 4.3.4 Calculating the combined uncertainty
- 4.3.5 Expanded uncertainty

4.4. Reporting uncertainty
- 4.4.1 The combined standard uncertainty (u_c)
- 4.4.2 The expanded uncertainty (U)
- 4.4.3 The uncertainty budget
- 4.4.4 Good Practice recommendations for preparing documentation

4.5 Uncertainty evaluation in the context of coastal marine observatories

5. CONCLUSION
6. BIBLIOGRAPHY

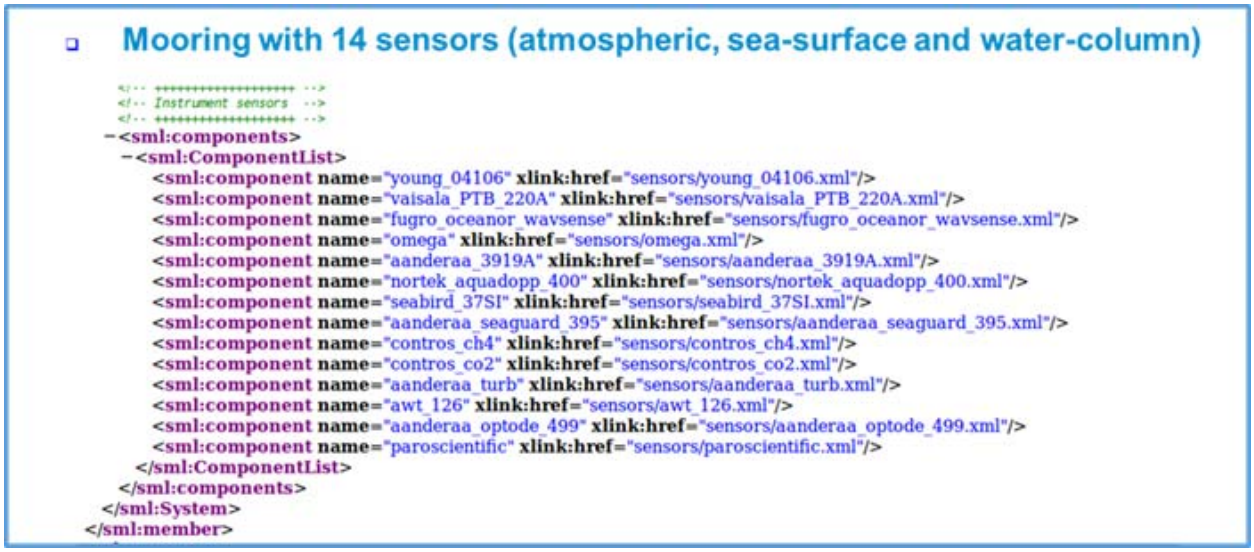
Task 5.2 Harmonization of delayed-mode data management procedures with SeaDataNet

The efforts required to harmonize delayed mode data management procedures and make *in situ* data coming from the JERICO coastal observing systems available through SeadataNet (SDN) are continuing.

The sub-contractor, MARIS, has been assisting data providers that are not NODCs to interface with the SDN infrastructure by populating the EDIOS catalogue (European Directory of the Ocean-observing System), generating CDIs (Common Data Indexes), and developing a prototype portal (based on SDN protocols) to facilitate direct access to JERICO data. MARIS has also provided a review of the "Delayed Mode Data Management Handbook". The Handbook now takes into account the latest developments within SDN, in Eurofleets, and in ODIP (EU - USA - Australia).

The subcontractor, MARUM, has set up procedures using the OGC's SWE suite and SensorML format to implement descriptions of the different elements of the JERICO observing infrastructure in a standardized, accessible way (Figure 1). The descriptions can contain technical specifications of platforms and sensors, details of instrument settings, calibrations and performances, and some information on data processing procedures, all of which will be helpful to users.

Figure 2. An extract from the sensorML description of HCMR's Poseidon - Pylos Platform.



Task 5.3 Harmonization of real-time data management procedures with MyOcean & EUROGOOS and the institution of data access services for JERICO TOP activities

Efforts were mainly directed towards assuring that the (near) real-time (NRT) data coming from Partners involved in WP7 (Services and Data Access) were being made available and readied for distribution. This NRT data stream is being routed to the French CORIOLIS Data Assembly Center through the MyOcean in situ TACs (Thematic Assembly Centres). The 19 contributing observing systems and the statuses of their data flows as in November 2013 are presented in Table 2. Further progress has been made since then, and most of the parameters provided by these different systems are now accessible.

A specific indexing and data distribution scheme was created. The scheme was developed by CAPGEMINI Consulting, the designated sub-contractor responsible for this activity. An appropriate tag (a JERICO index) was designed to easily recognize and select JERICO data from larger archives. This measure permits the clear identification of the JERICO contribution to the global marine observing system, and is consistent with the approach adopted in some other European projects dealing with marine data (for example, PERSEUS and MONGOOS).

The "First Data Management Report" (D5.3) was prepared and submitted to the Coordinator. The Report illustrated the JERICO approach to data management, the organization of the data handling within the project, the links to the major ongoing marine data management initiatives in Europe (SeaDataNet-II, MyOcean and EMODNet), and the work performed in WP5 until then.

- · ***Deliverables***

Del. no.	*Deliverable name*	*WP n°*	*Date due proj.month*	*Actual/Forecast delivery date*	*Estimated indicative person-months *)*	*Used indicative person-months *)*	*Lead contractor*
D5.1	*DM data management handbook V1*	*5*	*M8*	***Submitted M13***	*6*	*3*	*Ifremer*
D5.2	*RT data management handbook V1*	*5*	*M8*	***Submitted M13***	*6*	*3*	*Ifremer*
D5.3	*First data management report*	*5*	*M24*	***Submitted 33***	*6*	*6*	*OGS*
D5.4	*Guidelines for uncertainty*	*5*	*M30*	***Submitted M38***	*6*	*0*	*OGS*
D5.5	*Report on uncertainty*	*5*	*M42*	*M42*	*6.1*	*0*	*OGS*
D5.6	*DM data management handbook V2*	*5*	*M48*	*M48*	*6*	*0*	*OGS*
D5.7	*Second data management report*	*5*	*M48*	*M48*	*10*	*0*	*OGS*
D 5.8	*RT data management handbook V2*	*5*	*M48*	*M48*	*6*	*0*	*OGS*

- · ***Milestones list***

Del. no.	*Milestones name*	*WP*	*Date due proj.month*	*Actual/Forecast delivery date*	*Lead contractor*
MS16	*First JERICO management Handbook*	*WP5*	*M8*	***M13***	*OGS*
MS17	*Launch of service access*	*WP5*	*M18*	***M21***	*OGS*
MS18	*Report on activities*	*WP5*	*M46*	*M46*	*OGS*
MS19	*Final JERICO management Handbook*	*WP5*	*M48*	*M48*	*OGS*

- ***2.5.2 Deviations from the project work programme, and corrective actions taken***

Deliverable D5.3, the "First Data Management Report", was submitted in M31 instead of M24, as was originally planned. The Report had been distributed to the JERICO community for comments and review after it was prepared. The revision and final approval took longer than expected because feedback was particularly slow, especially from the Partners participating in WP7 (Service and Data Access) who were still experimenting with data handling procedures.

Deliverable D5.4, the document "Guidelines for Uncertainty", was not completely ready in M30 as scheduled, and was submitted to the Coordinator in M34 following review and approval by all the parties involved in its preparation.

2.6 WP6: OUTREACH

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2.6.1 Progress towards objectives – tasks worked on and achievements made

Task 6.1: Development of end-user products and services

SubTask 6.1.1: The development of end user products and services
The Jerico Community Hub was delivered ahead of schedule in M9, January 2012.
The Jerico Community Hub is hosted at www.jerico-fp7.eu. This has links to Trans National Access, the Forum for Coastal Technology, descriptions of the work packages, the Jerico OceanBoard, workshops and meeting documents. Since the website was launched in January 2012 it has had 19,000 visits from 157 countries. The countries with the most users of the Community Hub are Italy, UK, France, Spain, Greece and Malta.

SubTask 6.1.2: Development of the EMECO Datatool for Jerico
The Jerico Datatool was completed in M24.
The Jerico Datatool has been designed, developed, and implemented and is available as a link from the Jerico Community Hub; http://www.jerico-fp7.eu/datatool/. The user interface is targeted at public and educational sectors, and at scientific and policy users. The Datatool gives users access to integrated data products and datasets via a user interface. Data are being fed in directly from MyOcean. The Datatools were fully launched in March 2014 with the data that are available via Service Activity WP7 from 1st May 2014 and have already been visited over 600 times.

SubTask 6.1.3: Provision of data from Jerico observing systems onto public display monitors /information hubs including enhancement of NERC-NOCS FerryBox passenger display
The FerryBox JUD (Jerico User Display) document is available from a link on the front page of the Jerico Community Hub website: http://www.jerico-fp7.eu/live-ferrybox-data. The JUD has been tested by HCMR and SMHI.

The software has been coded in PHP using MySQL as a database and as such is modifiable by end users to suit their needs. A beta-test version will be made available to interested parties on a GitHub or BitBucket site, which are web-based hosting services for software development projects where information and ideas can be tested and shared. Ideas for improvement that can be discussed and tested via these services include: incorporating a table of current data values together with the current configuration; implementing some degree of data quality control prior to the images being display to screen; making the system more robust to data or system anomalies; and producing images that can be transmitted over a coaxial cable.

SubTask 6.1.4: On going maintenance, support, hosting of JCH and Jerico Datatool
This SubTask continues for the life of the Jerico programme.

Task 6.2: The Jerico OceanBoard

Jerico OceanBoard
SubTask 6.2.1: Jerico OceanBoard PROF
SubTask 6.2.2: Jerico OceanBoard PUB
Final version of Jerico OceanBoard was completed in M30.
The OceanBoard has been developed and incorporated into the Jerico Community Hub. The OceanBoard is complete and is available at: http://www.jerico-fp7.eu/oceanboard. There are ongoing updates and new content is uploaded to OceanBoard PUB and PROF web pages as it is made available to the coordinators and editorial group (University of Malta). There are six regions for articles: general, Baltic Sea, Black Sea, Iberian area, Mediterranean and North Sea. The PUB articles are aimed at the a non-scientific audience including younger generation, policy makers and stakeholders. The PROF articles are aimed at academia, students and professionals. The OceanBoard is used for presenting Jerico results, deliverables, news articles and advertising events. At the time of writing there are 44 articles.

SubTask 6.2.2 also includes a special activity conducted by CSIC dedicated to improving the knowledge of younger generations about the sea and new monitoring marine technologies in a changing coastal ocean. The web tool, "Follow the glider" has been developed. It has real-time data visualisation, with specific and adapted explanations for children on why we measure these data and why it is important to do ocean monitoring. There are sections with easy to follow text and graphics about the glider parts, sensors, navigation systems, piloting, etc. Also there is a specific section for teachers with adapted outreach material to explain to students how to "Follow the Glider…".

Task 6.3: The Jerico Summer School

Jerico Summer Schools:
These were postponed by one calendar year for each school. This was a change agreed at the outset of the Jerico programme.
Course 1 was completed 8–13th July 2013 (M27) and the Milestone 20 report was submitted in M28. The summer school was on Operational Oceanography in the 21st Century – The Coastal Seas. It focussed on technologies and the use of sensors and was held at University of Malta (UoM) in July 2013. There were 84 applicants from 28 different countries and 35 participants were selected by a committee. Aldo Drago at the UoM led the organisation of the summer school. It was a very successful summer school, as reflected in the feedback from the participants. The final report, including an analysis of participants' feedback, is available on the Community Hub: http://www.jerico-fp7.eu/deliverables/d63-jerico-malta-summer-school-2013-final-report.
Course 2 will will be held at Deltares in 14–20th June 2014. The summer school is "From data to decisions" and the course will aim to cover the entire marine and coastal information cycle from data gathering via data management, data dissemination, data analysis, data assimilation to data-based policy decisions. Information about the summer school is available on the Community Hub: http://www.jerico-fp7.eu/jerico-public/international-general/237-deltares-summer-school. Further details and the application process are available on a dedicated wiki site: http://publicwiki.deltares.nl/display/OET/JERICO.
It is anticipated that second summer school and its associated Milestone 21 report will be completed on time.

- ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj. month	Actual/ Forecast delivery date	Estimated indicative person months *)	Used indicative person months *)	Lead contractor
D6.1	Design and launch of JERICO OceanBoard v0	6	M6	Completed M9 Submitted M13	6.0	3	Cefas (& UoM)
D6.2	JERICO Community Hub	6	M12	Reported M12 Submitted M13	5.0	0.5	Cefas
D6.3	Summer school 1	6	M15	Completed M27 Submitted M28	3.02	0.3	UoM
D6.4	Development and implementation of suite of web-based interactive tools	6	M24	Completed M24 Submitted M25	8.0	0.0	Cefas
D6.5	Summer school 2	6	M27	Postponed to M39	4.0	0.07	DELTARES
D6.6	Final version of JERICO OceanBoard	6	M30	Completed M30 Submitted M32	14.08		Cefas (UoM)

- ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS20	Summer School 1	6	M16	Achieved M28	Cefas
MS21	Summer School 2	6	M28	**M38**	Cefas

- ***2.6.2 Deviations from the project work programme, and corrective actions taken***

Task 6.3 Summer schools. These were postponed by one calendar year for each school. The new date for Course 1 was 8–13th July 2013 and for Course 2 it will be 14–20th June 2014. This was a change agreed at the outset of the Jerico programme (1st steering committee decision) as more time was needed for the various partner organisations to prepare their data and to design the summer schools. Furthermore, the order of the summer schools has been changed. The 1st summer school was held at UoM and the second will be hosted by Deltares (as explained above).

• 2.7 WP 7 – SERVICE AND DATA ACCESS

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• *2.7.1 Progress towards objectives – tasks worked on and achievements made*

1) MOLIT & Mesurho buoys	
2) RECOPESCA (158 vessels)	
3) Alg@line	
	3 Ferrys :
	- Finnmaid (call sign = OJMI) : data reaching the Coriolis/MyOcean data flow.
	- Silja Serenade (call sign = OJCS) and Kristina Brahe (call sign = OIEC) :
	No data. Contact taken. Data will flow through NIVA
4) CRS - Coastal Research Station	
	1 coastal station and 1 mooring
	- Contact taken - Data integration process started
5) NorFerry - Norwegian Ferrybox network	
	3 Ferrys :
	- Norbjorn (call sign = LAKM4)
	- Trollfjord (call sign = LLVT)
	- Bergensfjord (call sign = OUZI2)

6) NorFerry – ColorFantasy	Color Fantasy (call sign = LMSD)
7) IMR - Coast observatories	
8) OGS-NACObs - FVG-MMS	
	Data will be available may 2013
	Development for data integration is started
9) OGS-NACObs – MAMBO	
	Contact taken
	Data will be available mid-april 2013
10) CNR – NAMS	
	Contact taken
	Data flow to Coriolis/MyOcean. Development for data integration started in December 2012 with the collaboration of the Mediterranean in-situ TAC (HCMR) and provision of archived data. Near real time data are provided in a dailly basis since July 2013. Archived data were provided starting from January 2013.
11) CNR – FOS	
	Contact taken
	Data flow to Coriolis/MyOcean. Development for data integration started in December 2013 with the collaboration of the Mediterranean in situ TAC (HCMR). Data from January 2014 have been provided on a monthly basis.
12) POSEIDON Buoy Network	
	8 stations
13) POSEIDON Buoy Network	
	3 stations
	1 Ferry : Olympic Champion (call sign = SYWD)
14) POL – COBS	
	No answer to a mail sent by coordinator
15) COSYNA	
	3 Ferrys :

	- Hafnia Seaways (call sign = 2AMH9) : No data
	- FunnyGirl (call sign DFPZ) : Data reaching Coriolis/MyOcean Database
	- LysBris (call sign = LJLN3) : Data reaching Coriolis/MyOcean Database
	- Wadden Sea Piles : Data integration process started
16) SMHI – MOS	
17) SMHI – Laesoe	
18) SmartBay Galway	
19)Puertos del Estado Deep Water Network	

Data set circulating in NRT

Data set not integrated in a NRT data stream

Development for data integration has started later with the background from 1sr January 2013

The following table gives more information about the data available in the Coriolis database with for each platform :

- The platform_code
- the date of the first measure since the beginning of 2013
- the numbers of locations since the beginning of 2013

	Platform	Platform_ code	First measure in 2013	Nb of locations
1) MOLIT & Mesurho Buoys	MOLIT	62021	11/02/2013	2439
	Mesurho	61284	01/01/2013	34488
2) RECOPESCA	38 platforms send data since the 1st of January 2013			
	For the total of 38 platforms :		01/01/2013	92500
3) Alg@line	Finnmaid	OJMI	01/01/2013	161885
5) NorFerry - Norwegian Ferrybox network	Norbjorn	LAKM4	No data in 2013	
	Trollfjord	LLVT	01/01/2013	56419

	Bergensfjord	OUZI2	No data in 2013	
6) NorFerry - ColorFantasy	Color Fantasy	LMSD	02/01/2013	48430
12) POSEIDON Buoy Network	Avgo	IF000229	No data in 2013	
	Athos	6101003		
	Lesvos	6101004		
	Mykonos	6101005		
	Kalamata	6101002		
	Skyros	6101000		
	Zakynthos	6101009		
	Pylos	68422	12/04/2013	88
13) POSEIDON Buoy Network	E1M3A	61277	No data in 2013	
	Saronikos	6101001		
	Santorini	6101006		
15) COSYNA	Hafnia Seaways	2AMH9	No data in 2013	
	FunnyGirl	DFPZ	21/02/2013	11/09/1910
	LysBris	LJLN3	01/01/2013	19/01/2462
17) SMHI - Laesoe	Laesoe	IF000204	No data in 2013	
18) SmartBay Galway	Castletownbere TG	EXMY0619	01/01/2013	10062
	Wesford TG	EXMY0685	01/01/2013	26409
	Sligo TG	EXMY0675	01/01/2013	25420
	Malin Head TG	EXMY0662	27/03/2013	5786

	Killybegs TG	EXMY0658	01/01/2013	25300
	Galway Port TG	EXMY0639	01/01/2013	25420
	Inishmore TG	EXMY0041	No data in 2013	
	Aranmore TG	EXMY0613	01/01/2013	25329
	Ballycotton TG	EXMY0614	01/01/2013	25300
	Howth TG	EXMY0647	01/01/2013	25294
	Dublin Port TG	EXMY0629	01/01/2013	31370
	Dundalk TG	EXMY0630	01/01/2013	14373
	Ballyglass TG	EXMY0692	01/01/2013	17475
	M6 Buoy	62095	01/01/2013	1311
	M5 Buoy	62094	01/01/2013	2681
	M4 Buoy	62093	01/01/2013	835
	M3 Buoy	62092	01/01/2013	1072
	M2 Buoy	62091	02/01/2013	2657
	M1 Buoy	62090	No data in 2013	
19) Puertos del Estado Deep Water Network	Bilbao	62024	01/01/2013	883
	Cabo de Penas	62025	01/01/2013	883
	Estaca de Bares	62082	No data in 2013	
	Villano-Sisargas	62083	01/01/2013	532
	Silleiro	62084	01/01/2013	839
	Cadiz	62085	01/01/2013	880
	Gran Canaria	13130	01/01/2013	870
	Tenerife	13131	10/01/2013	688

Cabo de Gata	61198	01/01/2013	883
Cabo de Palos	61417	01/01/2013	884
Valencia	61281	01/01/2013	886
Tarragona	61280	01/01/2013	886
Cabo Begur	61196	01/01/2013	884
Dragonera	61430	01/01/2013	884
Mahon	61197	01/01/2013	884
		Last update :	23/04/2013

- ***2.7.2 Deviations from the project work programme, and corrective actions taken***

All the foreseen data have not yet been integrated in the MyOcean database. A dedicated engineer is working with the partners to complete the integration before end of June. The next step will be to give access to these data through SeaDataNet.

• 2.8 WP 8 – TRANSNATIONAL ACCESS TO COASTAL OBSERVATORIES

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+Name of task team responsible persons:
Work package leader name: Stefania Sparnocchia

Task title	Responsible persons	Institution
Implementation of Trans National Access to Coastal Observatories	Stefania Sparnocchia	CNR

Partners involved in the activity:

Infrastructure/Installation proposed for TNA	Responsible person	Institution	1st Call	2nd Call	3rd Call
CRS Lubiatowo/CRS	Rafal Ostrowski	IBW PAN	X	X	
Norferry/Color Fantasy	Kai Sørensen	NIVA	X	X	X
OGS NACObs/OGS CTO	Rajesh Nair	OGS	X	X	
CNR MPL/ACQUA ALTA	Mauro Bastianini	CNR	X	X	X
CNR MPL/MPLS	Mireno Borghini, Katrin Schroeder	CNR	X	X	
CNR MPL/MPLC	Mireno Borghini, Katrin Schroeder	CNR	X		X
CNR MPL/MPL Genoa	Pierluigi Traverso	CNR	X		X
CNR MPL/MPL CAL 6	Stefano Cozzi	CNR	X	X	
CNR MPL/MPL CAL 7	Mario Sprovieri	CNR	X	X	
POSEIDON/POSEIDON BUOYS (1& 2)	Leonidas Perivoliotis	HCMR	X		
POSEIDON/POSEIDON CAL	George Petihakis	HCMR	X		
COBS/MARS	David White	NERC	X	X	X
COSYNA/COSYNA_1 (FB)	Wilhelm Petersen	HZG	X	X	X
COSYNA/COSYNA_2 (PILE)	Goetz Floeser	HZG	X	X	X
COSYNA/COSYNA_3 (GLIDER)	Lucas Merckelbach	HZG	X	X	X
CSIC-Glider/ CSIC-Glider	Simón Ruiz	CSIC	X	X	X
National Glider Facility/ CETSM	Pierre Testor	CNRS	X		X

2.8.1 Progress towards objectives – tasks worked on and achievements made

The 2nd Call for Transnational Access was published in the JERICO website on 14 January 2013 and closed on 27 March 2013.

We received 6 proposals (see following table), all of them were eligible, five of them were evaluated and approved. CALL_2_6 didn't received the feasibility approval by the operator (INSU/CNRS).

Reference number	Facility ID	Type	Facility provider	Proponent Group
CALL_2_1	MPLS	FP	CNR ITALY	P.I.: Anna Sanchez Vidal Partners: Antoni Calafat Trau, Miquel Canals Artigas, Rut Pedrosa Pàmies, Aitor Rumin Caparros, Universitat de Barcelona GRC Geocencies Marines, SPAIN
CALL_2_2	Cosyna_1 FB LysBris ferry ---------- MPLS	FB ------- FP	HZG GERMANY ---------- CNR ITALY	P.I.: Jana Klanova, Masaryk University Research Centre for toxic compounds in the environment - Environmental chemistry division, CZECH REPUBLIC Partner: Luca Nizzetto, Norwegian Institute for Water Research (NIVA), NORWAY
CALL_2_3	ACQUA ALTA	FP	CNR ITALY	P.I.: Kai Soerensen Partner: Pierre Jaccard Norsk Insitutt for Vannforskning (NIVA), NORWAY Partner: Giuseppe Zibordi, Joint Research Centre, Inst. for Environment and Sustainability, ITALY
CALL_2_4	Cuxhaven station ---------- Cosyna_1 FB LysBris ferry	FP -------- FB	HZG GERMANY	P.I.: Luca Sanfilippo - SYSTEA S.p.A. Anagni ITALY
CALL_2_5	MPLS	FP	CNR ITALY	P.I.: Dominique Lefevre, Mediterranean Institute of Oceanography Marseille, FRANCE Partner: Sana Ben Ismail, National Inst. of Marine Science and Technologies, TUNISIA Partner: Laurent Coppola, Observatoire Oceanographique de Villefrance/Mer, FRANCE
CALL_2_6	CETSM	GL	INSU/CNRS FRANCE	P.I.: Antonio Olita, Institute for Coastal Marine Environment of CNR, ITALY Partner: Slim Gana, SAROST SA, Marine Engineering and Geoscience, TUNISIA Partner: Maurizio Ribera D'Alcalà, Stazione Zoologica Anton Dohrn, ITALY

FB = FerryBoxes; FP = Fixed Positions; GL = Gliders.

The 3rd Call for Transnational Access was extraordinary (it wasn't planned in th Annex 1 - Description of Work). It was published in the JERICO website on 19 September 2013 and closed on 25 November 2013.
We received 5 proposals (see following table), all of them were eligible and were evaluated and approved.

Reference Number	Facility ID	Type	Facility Provider	Proponent
CALL_3_1	CSIC-glider	GL	CSIC SPAIN	P.I.: Antonio Olita, Institute for Coastal Marine Environment of CNR, Unit in Oristano, Operational Oceanography Group (GOO), ITALY
CALL_3_2	ACQUA ALTA	FP	CNR ITALY	P.I.: Jacques Piazzola, MIO, University of Toulon, FRANCE Partner: Gilles Tedeschi and Tathy Missamou, MIO, University of Toulon, FRANCE
CALL_3_3	CSIC-glider	GL	CSIC SPAIN	P.I.: Giorgio Budillon, DiST, Univ. "Parthenope" Napoli, ITALY FRANCE Partners: Yuri Cotroneo, Giuseppe Aulicino, and Giannetta Fusco, DiST, Univ. "Parthenope" Napoli, ITALY FRANCE Patners: Nadira Ait-Ameur and Yacine Hemdane, Ecole Nationale Superieure des Sciences de la Mer et de l'Amenagement du Littoral, ALGERIA
CALL_3_4	POSEIDON CAL	CL	HCMR GREECE	P.I.: Roberto Bozzano, National Research Council, ISSIA, ITALY Partner: Sara Pensieri, National Research Council, ISSIA, ITALY
CALL_3_7	CETSEM	GL	INSU/CNRS FRANCE	P.I.: Daniele Iudicone - Stazione Zoologica A. Dohrn, Laboratory of Ecology and Evolution of Plankton, ITALY Partner: Slim Gana, SAROST SA, Marine Engineering and Geoscience, TUNISIA Partner: Antonio Olita, Institute for Coastal Marine Environment of CNR, ITALY Partner: Maurizio Ribera D'Alcalà, Stazione Zoologica Anton Dohrn, ITALY

FB = FerryBoxes; FP = Fixed Positions; GL = Gliders; CL = Calibration Laboratories

Two requests of access period extension were also submitted at the 3rd Call by the P.I. of CALL_1_6 and CALL_1_9 (approved after the 1st Call). The extension was approved by the Selection Panel by email, and ratified during the meeting of February 26, 2014.

Description of the publicity concerning the new opportunities for access

Announcement of the second and third Calls for TNA were published in the News section of the JERICO website(1), as well as the Call texts(2), including detailed description of the facilities open to access(3), eligibility and access modality(4), and procedure of selection(5), which included the composition of the Selection Panel. The section announcing Calls included also uploadable application forms(6) and a guide to JERICO TNA(7), containing all the information above.

(1)www.jerico-fp7.eu/news-rss/162-second-tna-call-opens;
http://www.jerico-fp7.eu/news-rss/223-third-tna-call-opens
(2)www.jerico-fp7.eu/tna/calls-and-selection/second-call;
http://www.jerico-fp7.eu/tna/calls-and-selection/third-call
(3)www.jerico-fp7.eu/tna/calls-and-selection/second-call/access-facilities;
http://www.jerico-fp7.eu/tna/calls-and-selection/third-call/available-facilities
(4)www.jerico-fp7.eu/tna/access-rules
(5)www.jerico-fp7.eu/tna/calls-and-selection
(6)www.jerico-fp7.eu/attachments/article/151/JERICO%20TNA%20Application%20Form_%202nd%20Call.doc;htt

p://www.jerico-fp7.eu/attachments/article/212/JERICO%20TNA%20Application%20Form_%203rd%20Call.docx
(7)www.jerico-fp7.eu/attachments/article/151/Guide%20to%20JERICO%20TNA_2nd%20Call_16Jan2013.pdf;http://www.jerico-fp7.eu/attachments/article/212/Guide%20to%20JERICO%20TNA_3rd%20Call.pdf

Furthermore, the opportunities for access open to research teams throughout Europe were publicised in the institutional webpages of partners (CNR DTA and ISMAR, IFREMER, IBW PAN, CEFAS, MI, IBW PAN, IMR, Puertos del Estado), in the webpages of other projects and organizations (Eurorisnet, Euroceans, University of Gothenborg, NKE) and diffuse through mailing lists of other projects and organizations (EUROFLEETS, PERSEUS, Marine Ripple Effect, MONGOOS, NOOS, NEXOS).

Description of the selection procedure

Submitted proposals were collected by the JERICO TNA Office (jerico.tna@ismar.cnr.it), composed by Stefania Sparnocchia and Sara Ferluga at CNR-ISMAR in Trieste (Italy). After reception, the office registered each proposal and sent acknowledge of receipt to the Proponent communicating also the assigned Reference Number. The codes used were CALL_2_N and CALL_3_N for the second and third call, respectively.
Submitted projects were subjected to a three-step selection process involving:

i. validation of the proposals by the managers of the targeted facilities;
ii. evaluations of all the submitted proposals by the Selection Panel (SP), particularly with regard to scientific excellence, innovation and impacts on the state- of-the-art;
iii. final assessments by the SP.

The composition of the SP was the same communicated in deliverable D1.2 – Second Call for TNA Proposals V2, published on the JERICO web site http://www.jerico-fp7.eu/tna/calls-and-selection and also listed in **Annex 1** ***("List_of_Panel_members")***.

Trans-national Access activity

All the user-projects approved under the first TNA Call started in the reporting period, and only 6 of them have been concluded at present, while 3 out of 5 user-projects approved under the second TNA Call started. As regards the user-projects approved under the third TNA Call, the agreements between operators and users are in the signature process and the activities will start in the next months.
An overview of the user-projects and users supported in the reporting period follows, while detailed information is reported in **Annex 2** ***("List of User-Projects")*** and **Annex 3** ***("List of Users")***.

Project acronym and reference number	**Scientific field and discipline**	**User group leader**	**N. of users in the group**	**Installation used**	**Amount of access delivered**
CIEBIO CALL_1_11	Earth Sciences & Environment, Marine science/Oceanography	Roberto Bozzano, CNR- ISSIA	2	HCMR POSEIDON CAL	1 week
ECCECs CALL_2_2	Earth Sciences & Environment, Other - Environment	Jana Klanova - Masaryk University, RECETOX	3	CNR MPLS COSYNA FB	0.16 semester 0 days
GABS CALL_1_8	Earth Sciences & Environment, Global change & Climate observation	Alberto Ribotti, CNR IAMC	4	CSIC-Glider	91 days

GESEBB CALL_1_7	Earth Sciences & Environment, Marine science/Oceanography	Ainhoa Caballero Reyes – AZTI Technalia	5	INSU/CNRS CETSM	64 days
GLISS CALL_1_13	Earth Sciences & Environment, Other - Environment	Ian Allan – NIVA	2	COBS 4 POL GLIDER	42 days
MEDACID CALL_1_1	Earth Sciences & Environment, Marine science/Oceanography	Melchor Gonzales-Davila – Universidad de Las Palmas de Gran Canaria	2	HCMR POSEIDON BUOYS (1& 2) and CAL	8 months (buoy) & 1 week (lab)
METRO CALL_2_1	Earth Sciences & Environment, Marine science/Oceanography	Anna Sanchez Vidal - Universitat de Barcelona GRC Geocencies Marines	5	CNR MPLS	1,07 semester
MOSC CALL_2_5	Earth Sciences & Environment, Global change & Climate observation	Dominique Lefevre - Mediterranean Institute of Oceanography	3	CNR MPLS	0.16 semester
o-DGTSPOCME CALL_1_4	Earth Sciences & Environment, Other - Environment	Kevin C. Jones – Lancaster University	3	COSYNA_2 (PILE) Norferry Color Fantasy	41 days = 20.5UA 49 days + 24.5UA
OXY-COR CALL_1_9	Earth Sciences & Environment, Global change & Climate observation	Laurent Coppola, Observatoire Oceanographique de Villefranche/Mer	2	CNR MPLC	2.8 semesters
RTC CALL_1_5	Earth Sciences & Environment, Marine science/Oceanography	George Pethiakis, HCMR	3	OGS-CTO	1 week
SESAM CALL_1_6	Material Sciences, Knowledge based multifunctional materials	Edith Joseph – Université de Neuchatel SWITZERLAND	3	CNR MPL Genoa	304 days

- ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative person-months *)	Used indicative person-months *)	Lead contractor
D8.1	Trans National Access Provision	WP8	M48	M48	2.50	1.90	CNR

- · ***Milestones list: no milestones for this WP***

2.8.2 Deviations from the project work programme, and corrective actions taken

NERC will not provide all the facilities it originally proposed for TNA, in particular the facilities COBS 1 POL BUOY and COBS 3 FERRYBOX are no longer accessible, and COBS 4 POL GLIDER was replaced by the NOC Marine Autonomous and Robotic Systems (MARS) based in Southampton. As corrective action a revision of the costs was asked and negotiated between the beneficiary and the project coordinator.

INSU/CNRS referred to a wrong unit cost calculation for its glider infrastructure. Recalculation was asked for successive amendment to the Contract to account for expected changes in costs and this is in negotiation between the beneficiary and the project coordinator.

Since Color Fantasy ferry hosts the most advanced and accessible Ferrybox in Europe, NIVA decided to reoffer this facility instead of the one installed on Norbjørn.

CNR withdrew the calibration facilities identified with MPL CAL 6 and MPL CAL 7 asking for a redistribution of the allocated budget on other facilities.

IBW PAN withdrew the facility identified CRS since it was destroyed by an heavy storm and renounced to the allocated budget.

These changes were part of the amendment of the DoW proposed after the mid-term review. Funds not used by beneficiaries as assigned in the DoW will be added to the TNA budget for travel grants of users and Selection Panel members and partially redistributed among TNA beneficiaries whose facilities delivered more access than originally planned.

• 2.9 WP 9 – NEW METHODS TO ASSESS THE IMPACT OF COASTAL OBSERVING SYSTEMS

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• *2.9.1 Progress towards objectives – tasks worked on and achievements made*

Task 9.1: Coordination of the workpackage has continued. Several changes have occurred in the partner human resources which have been absorbed along the past 18 months. CMCC has changed the responsible from Dr. S.Dobricic to Dr. S.Masina, DMI changed from Dr. Weiwei Fu to Dr. Zhenwen Wan.
The work among partners is distributed as follows:

Type of experiment	Adriatic Sea	Aegean Sea	Bay of Biscay	North Sea	Baltic Sea
OSE	CMCC	HCMR		DELTARES HZG RBINS-OD	DMI
OSSE	CMCC		CNRS-IFREMER	HZG RBINS-OD	DMI

At the annual meeting in May, 2014 it has been decided that the technical meeting of WP9 together with WP-2-3-4 will be done October 30, 2014, about six month later than previously scheduled.

Task 9.2: **Impact of existing observational platforms on estimates of coastal processes**

This Task is concerned with the OSE studies. Partners involved are listed in Table 1 above. For OSE, the studied observing system components in the different seas are:

	Adriatic Sea	Aegean Sea	North Sea	Baltic Sea
Observing system analyzed	Temperature from Fishery Observing system	HF radar and Ferry Box SST	Tide Gauges, HF radar and buoy stations	Satellite SST

In the Adriatic Sea, the Fishery Observing System (FOS) data have been made available from WP4 (CNR): 7 fishing vessels data for 2007 have been used to study the impact of these kind of data on the quality of the analyses. Results show a relatively high impact of these measurements on the quality of basin average temperature reconstruction.
In the Aegean Sea, the HF radar data in front of the Dardanelles Strait have been assimilated and results indicate that different errors in the two vector components should be considered in order to get a positive impact from these data on the analyses. This result is in agreement with the same analysis done in the North Sea. Impact of FerryBox SST on the analysis is also found to be very relevant.
In the North Sea-German Bight area, the HF radar data assimilation shows a positive impact in a large area, extending as far as the central-southern North Sea but only for the zonal velocity component which is measured accurately. The impact of profiling buoy stations in the offshore areas of the North Sea is shown to be limited to the area around the buoy but optimal design of the array could bring benefits, reducing the cost of the observing system.
A study case of impacts of tide gauges on 6 and 12 hours forecasts has been carried out in the North Sea. It shows that upstream tide gauges, located on the eastern english coasts, will beneficially impact sea level forecast along the Dutch coasts up to 12 hours while closer tide gauges will have maximum impact in the 3-6 hours forecasts.
In the Baltic, SST assimilation shows a positive error reduction in the analysis.

Task 9.3 Impact of future coastal observing observing platforms on the estimates of coastal processes

This Task is concerned with OSSE experiments that are carried out only in four of the five European Sea areas, as outlined in Table 1. For OSSE, the studied observing system components in the different seas are:

	Adriatic Sea	Bay of Biscay	North Sea	Baltic Sea
Observing system analyzed	Temperature from Fishery Observing system	Fixed stations, gliders and Ferry Box SST	HF radar and buoy stations	XBT profiles and moored stations

In the Adriatic Sea, the work was up to now concentrated on the definition of the correct perturbation method to be used in order to produce a different-from-truth simulation to be used to insert synthetic data. The addition of salinity measurements in FOS will be tested in the next months.
The Bay of Biscay OSSE have been completed and publications are being pursued. Results concern the impacts of buoy and glider synthetic sections in the offshore area of the Loire river: it is found that, due to river plume dynamics, the northern glider sections have the potential highest impact on the quality of the temperature and salinity reconstructions. Impact of Ferry box SST data in the English Channel is compared to glider sections and it is found that, due to the homogenization of temperature and salinity in these waters, surface high frequency SST FerryBox data have maximum impact if compared with glider temperature profile assimilation.
For the North Sea, impact of synthetic vertical profiles with an optimized buoy network sampling scheme has been carried out and work is done to consolidate the results.
For the Baltic Sea, the network of buoy stations and XBT SOOP lines have been planned and experiments will be carried out in the next months.

- · ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative person-months *)	Used indicative person-months *)	Lead contractor
D9.1	First scientific report	9	M12	Delivered M12	10	10	CMCC
D9.2	First report on OSE	9	M18	Delivered M21	10	10	HCMR
D9.3	First report on OSSE	9	M18	Delivered M21	10	10	DMI
D9.4	Second scientific report	9	M24	Delivered M25	7.5	7.5	CMCC
D9.5	Second report on OSE	9	M36	Postponed to Month 44	10	10	HCMR
D9.6	Second report on OSSE	9	M36	Posponed to Month 44	10	10	DMI

- · ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS29	Final Report OSE as input to WP1	WP9	M42	M44	HCMR
MS30	Final Report OSSE as input to WP1	WP9	M42	M44	DMI

- ***2.9.2 Deviations from the project work programme, and corrective actions taken***

The previous WP leader, Srdjan Dobricic left CMCC in November 2013. The new WP leader arrived 6 months later. This is on of the reason to postpone the two final deliverables on OSE and OSSE experiments. This delay is also necessary to get consolidate the results and carry out the discussion with the WP1-2-3 at the October 30, 2014 meeting.

• 2.10 WP 10 – IMPROVED EXISTING AND EMERGING TECHNOLOGIES

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• *2.10.1 Progress towards objectives – tasks worked on and achievements made*

Progress to date on WP10 was presented at a dedicated JERICO WP10 workshop in Villefranche, France in October 2013. There is a separate meeting report from this workshop. This progress report summarises activities between months 24 and 36 of JERICO WP10. Most of the key deliverables and milestones are in the next 6 months and significant activity is underway to meet these deliverables.

Task 10.1 1 Development of new tools and strategies for the monitoring of key biological compartments and processes

Work on optimising the software for semi-automatic recognition of plankton groups is currently underway. One of the key issues with the new SPI software is to broaden out the number of images that the system is analysing to include sediment profile images of other regions in the European shelf seas. Researchers from outside the JERICO community were invited to a dedicated demonstration and workshop in Villefranche, October 2013.

The work, led by LOV (Stemmann, Picheral, Romagnan), on software development to analyse plankton images from lab instruments such as Zooscan and Flowcam is achieved and version zooprocess 7.12 can be downloaded from http://www.obs-vlfr.fr/LOV/ZooPart/ZooScan/. Note that the software includes flowcam and Zooscan, but also UVP and microscopy. It has been tested on a weekly time series (1 year) analysis that demonstrated that monitoring plankton biodiversity is possible and meaningful.

The results have been published:
•Pieter Vandromme, **Lars Stemmann**, Carmen Garcia-Comas, Léo Berline, Xiaoxia Sun, Gaby Gorsky (**2012**) Assessing biases in computing size spectra of automatically classified zooplankton from imaging systems: A case study with the ZooScan integrated system. Methods in Oceanography, doi:10.1016/j.mio.2012.06.001
•**Lars Stemmann**, Marc Picheral, Lionel Guidi, Fabien Lombard, Franck Prejger, Hervé Claustre, Gabriel Gorsky (**2012**) Assessing the spatial and temporal distributions of zooplankton and marine particles using the Underwater Vision Profiler. CNRS Edition, ed. Françoise Gaill, Yvan Lagadeuc et Jean-François Le Galliard
•**Lars Stemmann** & Hervé Claustre & Fabrizio D'Ortenzio (**2012**) Integrated observation system for pelagic ecosystems and biogeochemical cycles in the oceans CNRS Edition, ed. Françoise Gaill, Yvan Lagadeuc et Jean-François Le Galliard

Task 10.2 Development of physico-chemical sensors and implementation on new platforms

Sub-task 10.2.1: Contaminants Kai Sorensen

Evaluation of the Chem-mariner system continues in this reporting period of JERICO. A full test of functionality was conducted where the system was successfully operated in autonomous mode during two entire cruise legs. Sampling programme was predefined based on a set of geographic coordinates. Passive samplers were deployed inside the chamber and were exposed for preliminary testing purposes for a period of about 8 hours each in their respective locations. All system components worked efficiently. Results of chemical analysis of this preliminary test suggested longer exposure times are required to achieve detection of targeted contaminants (in this case PAHs). Some improvements and adjustments of the system will be performed and implemented for a last test.

Sub-task 10.2.2: Algal pigments Jukka Seppala, Willi Peterson

A flow-through PSICAM prototype for chlorophyll and TSM measurements has succesfully been tested and shows promising results concerning more reliable chlorophyll-a data compared to fluorescence measurements due to less influence of light conditions. The optimization and especially automated cleaning procedures are under development.

Commercially available single-wavelength fluorometers for the unattended detection of accessory pigments have been rigorously tested in spring 2013. Altogether 8 fluorometer models for phycobilin detection, from 4 manufacturers, were tested using 7 algal cultures, including various cyanobacteria, diatom, green algae and cryptophyte species. It was observed that the optical setup varies largely between instruments designated for the detection of phycocyanin, while instruments designated for phycoerythrin detection were quite similar. The main problem for some phycocyanin fluorometers with non-optimal optical setup is that other pigments present (chlorophyll, phycoerythrin) will increase the background signal and thus affect the reliability of the results. As a conclusion, care must be taken when selecting instruments for phycocyanin detection to avoid instruments giving biased results.

Phycoerythrin (PE) fluorometers have been tested both in the field and laboratory using alga1 cultures. The measured PE fluorescence intensity has been compared with phytoplankton counts of PE containing cells (epifluorescence microscopy and flowCAM analysis) and with size-fractionated fluorescence measurements. Initial results indicate that major part of the PE signal in the Baltic Sea originates from picocyanobacteria, though larger PE containing organisms may occasionally contribute to the signal as well.

Spectral fluorometer (Multiexciter, Advantech, Japan) has been tested with algae cultures and in the field. The initial analysis of the results show that the technique reliably tracks the abundance of cyanobacteria. The full statistical analysis of results is still pending.

Two novel Fast Repetetion rate fluorometer instruments (FRRf) for measuring variable chlorophyll a fluorescence (Chelsea Instruments, Uk; PSI, Czech Republic) have been tested in the laboratory during spring 2013. Initial tests have been performed with alga1 cultures, to determine optimal setup for measuring Rapid Light Curves (RLC, response of fluorescence parameters to changes in light levels). The RLC technique together with light and absorption measurements may be used in estimating primary productivity of phytoplankton. Both systems tested may be operated unattended in Ferrybox systems. During the field trials in 2013-14, in a ferrybox between Helsinki and Travemünde, we have focused on Integration of the FRRf with existing systems, establishing measurement protocols, developing software for instrument control, synchronization, and data handling and testing the sensitivity of the FRRf in natural waters.

Sub-task 10.2.3: Carbon and pH Kai Sorenson, Willi Peterson

NIVA have conducted several tests and updates of the Franatech pCO2 system in a Ferrybox application during this period. This membrane based solid state detector system can be calibrated by the user which makes it more flexible. Some correction on humidity must be performed by theoretical consideration since this is not measured directly. The long term test has started on MS Trollfjord along the Norwegian coast.

NIVA have also developed a miniaturized *in situ* detection system for pH. This is in operation along with the pCO2 system on the MS Trollfjord. One more system is undergoing safety checks in order to be hosted by the ferrybox system running onboard the Color Fantasy cruise line, for continuous monitoring of Skagerrak and Kattegat from Oslo to Kiel. The pCO2 system will also be installed there shortly.

A combined high precision pH and alkalinity measuring system based on sequential injection analysis (SIA) has been successfully tested in combination with FerryBox systems aboard research vessels.

Task 10.3 Emerging technology, profiling technology, intercomparison with mature technologies Rajesh Nair/Laurent Coppola

The profiling float system, designed and constructed ad hoc by OGS for the proposed inter-comparison experiment in the northern Adriatic Sea, was deployed in November, 2013 incorporating a NKE Instrumentation Arvor-C float supplied by Ifremer for the purpose. The system functioned for about a week when the tether broke following a bout of extreme weather, freeing the float. The Arvor-C was recovered, and the possible causes of the incident were evaluated. Some small modifications to the system were made based on the results of this evaluation, and the system was deployed again on 10 January, 2014. It worked until 17 January, when the float broke free once more, and had to be recovered as before. The Arvor-C unit was continuously monitored during both the trials by the Ifremer Centre in Brest which aided enormously in its recovery after the breakaways. the The whole system is being redesigned at the present time and at least one more test is planned shortly, though with an in-house Arvor-C unit this time as the one provided by Ifremer is being returned. The report on the trials already conducted is currently in preparation.

The CTD sensors on the EOL buoy are working in mooring mode since April 2014 due to recent damage to the winch. A new winch is under construction and should be implemented in Autumn 2014. More recently an oxygen sensor (optode 4330) has been mounted on the CTD sensor for long-term measurements as well as a pH sensor at the surface (2m depth).

Task 10.4 Ships of opportunity, Next generation fishing vessels probes Laurent Delaunay/ Michela Martinelli

Through the WRSC & IRSC 2013 event in Brest a demonstration of autonomous platforms including kayaks and small sailing boats sometimes equipped with sensors has been performed in September 2013 during the World Robotic Sailing Championship. The primary mission of the event is to attract academia to conduct research and to develop marine robotics around new issues. The objective was to show the state of the art in robotics water surface vehicles and make demonstrations in order to stimulate, promote and encourage innovation in the development of autonomous sailing robots via a friendly competition. The specifications of the autonomous surface vehicle were: up to 4 m long, robust and reliable enough to complete various missions including autonomous scientific measurements. In this context the VAIMOS autonomous sailing boat designed by Ifremer and ENSTA Bretagne has been demonstrated. This autonomous sailing boat has been originally designed for autonomous surface *in situ* measurements.

During the Jerico Workshop in October 2013 in Villefranche sur Mer, a presentation has been given entitled: "USV Novel Platforms".
Four categories of USV platforms have been presented:

- USV for shallow water
- ASMV (Autonomous Self Mooring Vehicle)
- Coastal USV
- UOV (Unmanned Ocean Vessel)

USVs for shallow water are dedicated to Hydrographical survey, most of the time their specification is a compact size and a reasonable weight that allows handling by one or two persons. Quite rapid, this kind of USV allows fast survey mapping with few sensors on board and real time telemetry. Commonly, echo sounders, GPS and camera are part of the set up. There is very little feed back on chemical sensors in the literature. In this category, we can mention the Z-Boat 1800 from ocean science group.

ASM (Autonomous Self Mooring Vehicle) is a very specific category in which there are not many candidates. We can mention the C endure platform from ASV Limited (UK). It consists of a medium size platform that can hold various kinds of sensors (passive acoustic, meteocean, seismic and environmental). The idea is to get 3 months autonomy with the help of solar panels and windmill. The platform can remain in a stationary position and has still some possibilities to move at low speed (4 knots) over a 4000 miles range.

CNR spent a considerable effort in testing various commercial probes (Star Oddi, NKE, SeaBird) in order to evaluate typology, precision, accuracy, size, suitability for the use on fishing gears.
CNR upgraded the FOS (Fishery Observing System) already in place in the Adriatic Sea (7 boats) in order to obtain more parameters and near real time data transmission.

Various testing and demonstration surveys with simultaneous use of CTD and probes, and trials on the sensors mounted on fishing gears have been performed on board of R/V Dallaporta (Cruise "Bianchetto" 27 February – 8 March 2012, Cruise "I-UWTV Survey 2012 - JERICO trials" 28 April – 14 May 2012, Cruise "I-UWTV Survey 2013" 6-22 April 2013, Cruise "I-UWTV Survey 2014" 22 April 2014 – 14 May 2014).

The first test installations of the upgraded system (for the moment named "Fishery and Oceanography observing system – FOOS") took place in June 2012. The goal was to convert and expand the whole system in place in order to be ready for WP7 request of data (SERVICE AND DATA ACCESS: 1 year – 2014). In January 2014, monthly datasets from 5 boats were ready, while at present time (June 2014) CNR is able to send to WP7 servers data from 8 vessels in the Adriatic Sea.

Task 10.5 FerryBox data quality control algorithm Willi Petersson

Existing Ferrybox quality control schemes were evaluated and discussed at the Ferrybox workshop in Helsinki (April 2013) with a view to developing new algorithms in the September 2013-2015 period. This task brings together the collective experience of Europe's Ferrybox operator in the development of new algorithms that will be made widely available to FB operators. The algorithms are adapted to the recommendation of the EuroGOOS Data-MEQ group for quality control of real-time in-situ data. The algorithms are applied either directly after measurement (e.g. HZG) or before central storage (NIVA) of all FerryBox data within the MyOcean project.

Task 10.6 Remote sensing of SPM Fritz Francken

RBINS OD-Nature have now identified a platform that they have access to in Belgian coastal waters to conduct this inter-comparison experiment. A Campbell Scientific OBS5+ sensor was attached on a buoy (in water depths of ~10 m) in the direct proximity of the benthic tripod frame. The turbidity sensor has been collecting data since end of September 2013 and has witnessed several storm events. It will continue to gather data until mid September 2014.
.***This task was not initially in the DoW.***

- · ***Deliverables***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual Forecast delivery date	Estimated indicative person-months *)	Used indicative person-months *)	Lead contractor
D10.1	Report on trials and deployments	10	M36	M41	20	0	MI
D10.2	Set of software (analysis of SPI, Flowscan and Zooscan images)	10	M42	M42	60	6	INSU/CNRS
D10.3	Report on data analysis (moored profile comparison, 3D T/S structure)	10	M42	M42	32.5	2	HZG
D10.4	Report on potential new sensors (fishing vessels and VOS)	10	M42	M42	30	2	IFREMER

- · ***Milestones list***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS22	JERICO workshop on sensors for vessels of opportunity and fishing vessels probes	WP10	M12	Achieved M2	MI Ifremer
MS23	Software and manuals for new image analysis techniques (including Flowscan and Zooscan)	WP10	M24	*M42*	INSU/CNRS (not BLIT as indicated in the DOW)
MS24	Recommendations Report for autonomous carbon measurements	WP10	M26	*M41*	MI
MS25	Data report on salinity and Temperature measurements from XBT and FerryBox	WP10	M26	*M42*	MI

MS26	Report of joint workshop on best practices for coastal observatories	WP10	M30	Achieved M27	MI

- ***2.10.2 Deviations from the project work programme, and corrective actions taken***

There were some delays in the moored profiling experiment due to equipment availability and technical problems due to a bad weather event at the MAMBO buoy location in November 2012. These experiments are now expected to be conducted in Q3 2013.

3 DELIVERABLES AND MILESTONES TABLES

3.1 Deliverables list

Del. no.	Deliverable name	WP n°	Delivery date from DOW	Actual/Forecast delivery date	Estimated indicative person-months	Used indicative person-months	Lead beneficiary
D1.1	First call for TNA proposals	1	M8	**M9**	5		CNR
D1.2	Rationale and definitions for a common strategy	1	M9	**M21**	6		INSU/CNRS
D1.3	Terms of reference of the FCT	1	M9	**M14**	3		MI
D1.4	JERICO label definition	1	M18	**M38**	2		HCMR
D1.5	Second call for TNA proposals	1	M20	**M21**	5		CNR
D1.6	First report of the FCT activity	1	M24	**M27**	3		MI
D1.7	First report of the access activity	1	M24	**M25**	5		CNR
D1.8	Second report of the FCT activity	1	M36	M40	3		IFREMER
D1.9	Proposed strategy for biodiversity	1	M36	M38	4		NIOZ
D1.10	Second report of the access activity	1	M42	M42	5		CNR
D1.11	Final report	1	M48	M48	20.3		INSU/CNRS
D2.1	Report on existing observation network	2	M12	**M21**	6		IMR
D2.2	Report on recommendations	2	M12	**M26**	6		IMR
D2.3	Integrated Pan European Atlas first report	2	M18	**M29**	6		IMR
D2.4	Demonstration of the feasibility of Joint trans-regional production	2	M24	**M26**	9		SMHI
D2.5	Integrated Pan European Atlas/second report	2	M48	M48	6,25		IMR
D3.1	Report on current status of FerryBox	3	M9	Uploaded M15 **Submitted M18**	20		HZG/NOCS
D3.2	Report on current status of gliders observatories within Europe	3	M15	**M27**	20		CSIC
D3.3	Review of current marine fixed instrumentation	3	M21	**M27**	20		HZG/CEFAS

D3.4	Report on new sensor developments	3	M36	**M38**	24.7		HZG
D3.5	Conclusion report	3	M42	M42	20		HZG
D4.1	Report on existing facilities	4	M18	**M21**	10.00		HZG
D4.2	Report on calibration best practices	4	M36	**M38**	20.00		HZG
D4.3	"Report on biofouling prevention methods	4	M36	**M38**	20.00		CNR
D4.4	"Report on best practice in operation and maintaining	4	M42	M42	20.00		HCMR
D4.5	Report on running costs of observing systems	4	M48	M48	14.50		CEFAS
D5.1	DM data management handbook V1	5	M8	**M13**	6		Ifremer
D5.2	RT data management handbook V1	5	M8	**M13**	6		Ifremer
D5.3	First data management report	5	M24	**M33**	6		OGS
D5.4	Guidelines for uncertainty	5	M30	**M38**	6		OGS
D5.5	Report on uncertainty	5	M42	M42	6.1		OGS
D5.6	DM data management handbook V2	5	M48	M48	6		OGS
D5.7	Second data management report	5	M48	M48	10		OGS
D5.8	RT data management handbook V2	5	M48	M48	6		OGS
D6.1	Design and launch of JERICO OceanBoard v0	6	M6	**M13**	6.0		Cefas (+UoM)
D6.2	JERICO Community Hub	6	M12	**M13**	5.0		Cefas
D6.3	Summer school 1	6	M15	**M28**	3.02		UoM
D6.4	Development and implementation of suite of web-based interactive tools	6	M24	**M25**	8.0		Cefas
D6.5	Summer school 2	6	M27	M39	4.0		DELTARES
D6.6	Final version of JERICO OceanBoard	6	M30	**M32**	14.08		Cefas (+UoM)
D8.1	Trans National Access Provision	WP8	M48	M48	2.50		CNR

D9.1	First scientific report	9	M12	**M12**	10		CMCC
D9.2	First report on OSE	9	M18	**M21**	10		HCMR
D9.3	First report on OSSE	9	M18	**M21**	10		DMI
D9.4	Second scientific report	9	M24	**M25**	7.5		CMCC
D9.5	Second report on OSE	9	M36	M44	10		HCMR
D9.6	Second report on OSSE	9	M36	M44	10		DMI
D10.1	Report on trials and deployments	10	M36	M41	20		MI
D10.2	Set of software (analysis of SPI, Flowscan and Zooscan images)	10	M42	M42	60		INSU/CNRS
D10.3	Report on data analysis (moored profile comparison, 3D T/S structure)	10	M42	M42	32.5		HZG
D10.4	Report on potential new sensors (fishing vessels and VOS)	10	M42	M42	30		IFREMER
D11.1	Signed consortium agreement	11	M2	**M8**	2		IFREMER
D11.2	Quality assurance plan	11	M3	**M6**	5		HCMR
D11.3	Identity Set	11	M6	**M12**	2		NIVA
D11.4	First periodic report	11	M18	M21	12		IFREMER
D11.5	Second periodic report	11	M36	M39	12		IFREMER
D11.6	Final report	11	M48	M48	15		IFREMER

	Deliverable submitted in the period < M36		Deliverable submitted in the period M36/M38		Deliverable postponed outside the period

3.2 Milestones list

Mil. no.	Milestones name	WP n°	Delivery month from DOW	Actual Forecast achievement date	Lead contractor	Achieved Yes/No	Comments
MS1	Kick off meeting	WP11	1	**M1**	Ifremer	**Yes**	Kick off meeting report
MS2	First intermediate GA	WP11	18	**M18**	Ifremer	**Yes**	General Assembly in Iraklion (1 and 2 Oct)
MS3	2nd intermediate GA	WP11	36	**M36**	Ifremer	**Yes**	
MS4	Final GA	WP11	48	48	Ifremer	**No**	
MS5	First steering committee outputs	WP1	9	**M9**	INSU/CNRS Ifremer	**Yes**	First steering committee report
MS6	Infrastructure available for users	WP1	11	**M9**	INSU/CNRS	**Yes**	1st TNA call
MS7	First forum for coastal technology	WP1	18	**M18**	INSU/CNRS	**Yes**	Held during the Sea Tech Week in Brest

MS8	Second steering committee outputs	WP1	18	**M19**	INSU/CNRS Ifremer	**Yes**	SC meeting in Iraklion in October 2012
MS9	Third steering committee outputs	WP1	27	**M25**	INSU/CNRS Ifremer	**Yes**	SC meeting in Galway in may 2013.
MS10	Second forum for coastal technology	WP1	30	**M35**	INSU/CNRS	**Yes**	During OI 2014 in London in march 2014
MS11	Fourth steering committee outputs	WP1	36	**M37**	INSU/CNRS Ifremer	**Yes**	SC meeting in Oslo in May 2015
MS12	Fifth steering committee outputs	WP1	45	45	INSU/CNRS Ifremer	**No**	
MS13	User reports of activities	WP1	47	47	INSU/CNRS	**No**	
MS14	Roadmap for the future	WP1	48	48	INSU/CNRS	**No**	
MS15	Constitution of a permanent JERICO Working Group for Calibration Activities	WP4	30	42	HCMR	**No**	
MS16	First JERICO management Handbook	WP5	8	**M13**	OGS	**Yes**	Handbook in progress
MS17	Launch of service access	WP5	18	**M21**	OGS	**Yes**	Done
MS18	Report on activities	WP5	46	46	OGS	**No**	
MS19	Final JERICO management Handbook	WP5	48	48	OGS	**No**	
MS20	Summer School 1	WP6	16	**M27**	CEFAS	**Yes**	Organisation UOM
MS21	Summer School 2	WP6	28	38	CEFAS	**Yes**	Organisation Deltares
MS22	JERICO workshop on sensors for vessels of opportunity and fishing vessels probes	WP10	12	**M2**	MI Ifremer	**Yes**	Workshop report done
MS23	Software and manuals for new image analysis techniques (including Flowscan and Zooscan)	WP10	24	**42**	INSU/CNRS (not BLIT as indicated in the DOW)	**No**	**Milestone MS23 brought in line with Deliverable D10.2**
MS24	Recommendations Report for autonomous carbon measurements	WP10	26	41	MI	**No**	
MS25	Data report on salinity and Temperature measurements from XBT and FerryBox	WP10	26	42	MI	**No**	
MS26	Report of joint workshop on best practices for coastal observatories	WP10	30	**M27**	MI	**Yes**	
MS27	Report on activities	WP2	42	42	IMR	**No**	
MS28	Report on activities	WP3	42	42	HZG	**No**	
MS29	Final Report OSE	WP9	42	42	HCMR	**No**	
MS30	Final Report OSSE	WP9	42	42	DMI	**No**	

	Milestone achieved in the period < M36		Milestone achieved in the period M36/M38		Milestone not achieved within the period

4 PROJECT MANAGEMENT DURING THE PERIOD (WP11 report)

+Person in charge of this report:
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Institution name and Acronym: Ifremer

+Name of other persons involved in the WP11:
Dominique Durand (NIVA), Georges Petihakis (HCMR), Ingrid Puillat, Nolwenn Beaume, Maelle Pichard (Ifremer)

To ensure efficient project coordination adapted to the specificities of the JERICO project and to achieve the project objectives and goals, the management is divided into the following tasks:

- Task 11.1: Day to day management
- Task 11.2: Financial follow-up
- Task 11.3: Technical reporting
- Task 11.4: Quality assurance plan
- Task 11.5: Consortium animation
- Task 11.6: Other management related issues

4.1 Day to day management

To ensure an active and efficient management of the project, JERICO has developed some tools as a quality assurance plan, a project Identity set and templates for the reporting.
The coordinator manages the delivery and the follow-up of the deliverables and all official documents (administrative and financial ones). He organized the second general assembly in OSLO (5 to 7 may 2014) and the 3rdsteering committee meetings, in Galway (May 2013) and the 4th one in Oslo (May 2014, after the second general assembly).

4.1.1 Second General Assembly

The second general assembly was held in Oslo, the 5 and 6 May 2014 (The 7th was dedicated to a workshop on future strategy) and was followed by the 4th steering committee. This assembly was organised by the partner NIVA.

The aim of this GA was to present the status of each WP in order to identify the work to be done in the last year of Jerico. Actions were decided by the steering committee, listed below:

1	*Deliver the second FCT final report*	G Nolan	End of July
	Complete the Label document and the roadmap	WP1 members + G Petihakis	End of June
	Organize a stakeholders' meeting	P Farcy	Before the end of the project

2	*Update the gap analyses report*	WP2 members + WP9	TBD
	Promote Task 2.2	WP2 members + BL	TBD
	Organize a joint meeting between WP1, 2, 3 & 9	N Pinardi, H Wehde, P Gorringe	Agenda for mid june (October 28th)
3	*Organize a workshop on fixed platforms in common with WP4*	W Petersen + P Gorringe	October 27th
	Update the fixed platforms data base and make it available on the website (+EMODNET)	WP3 member + BL+ P Gorringe	TBD
4	*Organize a workshop on fixed platforms in common with WP3*	WP4 members + WP3	October 27th
	Send a small questionnaire to the partners to see if they can apply the label recommendations	*HCMR*	TBD
5	*Solve the issues with MyOcean*	WP5 members	End of June
	Check that the JERICO data in EMODNET is labelled	L Petit de la Vileon + P Gorringe	End of June
6	*Promote the Summer School*	WP6 members	End of May
7	*Work on the portal (data coming from JERICO partners + link with MyOcean and SeaDataNet)*	WP7 members	TBD
	Initiate the TOP: application of JERICO data tools and 2 other TOPS	WP7 members + BL	TBD
8	*Prepare a final workshop focusing on TNA projects*	WP8 members	Before the next GA
9	*Organize a meeting with WP1, 2, 3 & 4*	N Pinardi	End of October
10	*Finalize the Villefranche workshop report*	G Nolan	End of June
	Follow up on Task 10.5 and 10.6	G Nolan	End of June
11	*Deliver the technical and financial reporting to the EC*	IFREMER + partners	End of June
	Propose an editorial group for a special issue (to be released before the end of the project)	I Puillat + WP8, 9, 10 and 11	Mid-June
	All partners should give their real costs concerning TA and SA	JERICO partners	End of May

4.1.2 Steering Committee meetings

The 3rd Steering committee meeting (SC) was held in Galway on 16th and 17th of May 2012. The second meeting was held in Iraklion on 2nd of October 2012.

-All the actions taken by the 2nd SC are closed except the action SC1_14 “Constitution of the permanent WG on calibration” wich is postponed till the end of 2014

-The actions decided by the 3rd SC are:

Decision SC3#	***Content***	***Who, when***
1	Initiate the content of the MOU with SEADATANET & EUROGOOS	*Not mandatory*
2	Dedicated meeting of WP2 during next EUROGOOS annual meeting.	*WP2, Henning Wehde, November 2013*
3	Preparation of the WP10 scientific meeting in October	*Glenn Nolan, Lars Steeman, Antoine Gremare, Patrick Farcy.*
4		*Coordinator and Steering committee, ASAP*
5		*Georges Petihakis. Label to complete end of 2013*
6	Invitation to a preparatory meeting on the future strategy in Paris in June the 18th	*Coordinator, before end of May*
7	The task 10.3 meeting is postponed in October in Nice	*WP10, Glenn Nolan*
8	Completion of the waited Deliverables before end of May	*WP1 (FCT), WP2, WP3, WP5 & WP9 leaders*
9	A new call for TNA to be launched in September or October 2013	*WP8, Stefania Sparnocchia*
10	WP9 meeting (common with WP2 one) during next EUROGOOS annual meeting	*WP9, Srdjan Dobricic*
11	1st period activity report addendum for to be sent to the coordinator	*Before May the 24th*, WP1, 2, 3, 9, 10 leaders
12	NERC to provide new WP7 and WP8 unit of access cost calculation and WP10 new objectives and men months	*Richard Lampitt*
13	4 news associate partners are accepted except for the WP8 activities.	*Coordinator, Agreements to be provided, end of September*
14	Next Steering committee to plan : when and where	*Coordinator, mid September.*

4.1.3 Other Committees

The TNA Selection Panel meeting was organised on February 2014, in Brussels. This panel meeting's objective was to select the projects which pass the evaluation threshold.

The points of the Agenda were the following:
1) Status of JERICO TNA submitted proposals, 2nd and 3rd calls
2) Approval of second TNA Call Evaluation Report
3) Approval of received revised proposals
4) Formal approval of TNA webpages at http://www.jerico-fp7.eu/tna

Workshops and meetings organized by the project

The main meeting and workshops during the 2nd period are:
October 2012: 1st general assembly - CRETE
October 2012: FCT & 1st calibration experiment – BREST (F)
April 2013: Ferrybox meeting – HELSINKY (FI)
May 2013: Steering committee n°3 – GALWAY (IR)
June 2013: Mid Term Review – PARIS (F)
October 2013: Workshop WP10 – VILLEFRANCHE (F) and Start of the 2nd calibration experiment
November 2013: WP2 meeting with EUROGOOS
February 2014: Strategy meeting – Brussels
March 2014: FCT at OI – LONDON (UK)
2nd General Assembly and Steering committee n°4: Oslo, May 2014

The future ones are:
Final NA workshop (WP3 & 4): TBD, end of 2014
Steering committee n°5: TDB, Jan/Feb 2015
Stakeholder meeting: TDB, 2015
Final GA: France, April 2015 for All partners.

4.2 Financial follow-up

The financial contact person at Ifremer is formely Philippe MOAL. Persons in contact for the day to day reporting are Caroline Gernez and Nolwenn Beaume. They provide templates to fill in the periodic report with the financial inputs from all the partners. Nolwenn manages the preparation of the M36 financial report. Caroline coordinates the preparation of the first amendment to the dow which is on going and will be signed soon.

4.3 Technical reporting (including technical Deliverables)

The Project Deliverables are split into two categories:

- the technical Deliverables and Milestones,
- the interim, periodic and final reporting.

To ensure proper delivery at due dates, some principles have been set up in the Quality Assurance Plan to allow each actor in the process to know how and when he/she is expected to contribute. The management team intervenes at the beginning of the process (to remind concerned beneficiaries that they are involved in a future delivery) and at the end (to consolidate and harmonize various contributions and finally to store the Deliverable reports.

The deliverable reports can be uploaded from the JERICO Website.

The 36-months interim report was the second official reporting done by the Project. It will be accessible on the website (as a deliverable).

4.4 Quality Assurance Plan (QAP)

The Quality Assurance Plan (Deliverable D11.2) of the JERICO project aims to describe the Project organization (project bodies description and responsibilities, Work Package management and meetings) and the Project communication (communication means, templates, naming conventions and storage, and publications /dissemination rules), but also to describe the technical and financial aspects in view of the mid-term review and periodic reporting. For this purpose, several processes have been proposed for the delivery and storage of Deliverables and Milestone.

4.5 Consortium animation and communication

The Consortium animation is mainly based meetings, WPs workshops and, on the use of the working and reporting tools and the set of templates. All JERICO documents and communication supports use the Identity Set created for the Project and described in the Deliverable D11.3 “Project Identity set”.
The fundamentals of the Project Identity are composed of two main components, the logo and the banner (for websites, posters …), in addition to Power Point templates and MS word template.. They can be used in a variety of forms, either on materials and presentation slides to promote the dissemination of the Project identity or on the set of templates to ensure efficient communication within the Project.

The creative work has been subcontracted to a specialised SME, H.Comm and the banner including the logo presented hereafter (in full and abbreviate versions,) was designed with the following explanation concerning the graphics and contents:

- the blue color is for serious and institutional character and in connection with ocean;
- the wave evokes the sea;
- a map of Europe is inserted in the wave;

The JERICO banner obviously includes the JERICO and FP7 logos and the European flag, with the three observing infrastructure included in the project, i.e. ferry, fixed platform (buoy) and glider.

All the communication tool and graphic materials are available on JERICO website: www.jerico-fp7.eu. in the "Partner only" pages which are accessible via login and password after registration.

4.6 Other management related issues (including Relations with other European Projects)

- Committees

The main tasks and objectives of the four JERICO committees are described in the Annex I of the DoW. These committees are:

- *The steering committee (SC)*

It is composed by the main partners of the project; EEA and Marine Board are permanently invited to the SC meeting. Five SC meeting are planed during the project life at M9, M18, M24, M36, and M42. An extraordinary SC meeting can be organized by the coordinator as required. Some decision may be taken by exchanges of emails. The SC representatives are:

W. PETERSEN – HZG, S. KAITALA – SYKE, R. LAMPITT – NERC, D. MILLS – CEFAS, D. DURAND – IRIS on behalf of NIVA, G. NOLAN – MI, A. GREMARE – CNRS, S. SPARNOCCHIA – CNR, G.PETIHAKIS – HCMR, J. TINTORE – CSIC, P. FARCY – IFREMER.

P. GORRINGE from EUROGOOS is permanently invited to the steering committee meetings.

- *The Scientific Advisory Committee (SAC)*

It is a consultative body, important to maintain communication with international scientific communities and to prepare further steps. It is composed by:

1) Dr. Janet Newton, Biological Oceanographer, University of Washington
2) Dr. George Zodiatis, Physical Oceanographer, University of Cyprus.
3) Dr. Richard Dewey, Physical Oceanographer, University of Victoria, Canada.
4) Dr. Hans Dalhin, Director of EUROGOOS
5) Dr. Roger Proctor, Program Leader, IMOS, University of Tasmania, Australia

- *The FCT Advisory committee (FCTAC)*

It is in charge of the technical expertise for the organisation of the Forum for Coastal Technology. This committee is composed by:

1) Glenn Nolan (MI)
2) Yannick Aoustin (Ifremer)
3) Franciscus Colijn (Univ Kiel - Ferrybox)
4) Laurent Mortier (LOCEAN - glider)
5) Alicia Lavin (IEO – fixed platforms)
6) Secretary: French "pôle Mer", association of SMEs in marine R & D

- *The TNA selection committee*

It is in charge of the evaluation and the selection of the proposed project relevant to the TNA calls. This committee is composed by:

1) The 5 SAC experts (Newton, Zodiatis, Dewey, Dalhin, Proctor)
2) The 3 FCT board experts (Colijn, Mortier, Lavin)

These 8 members are the TNA scientific evaluation Team

3) The WP8 leader, Stefania Sparnocchia.
4) The coordinator, P Farcy.
5) The WP1 coordination team: P Morin-CNRS, D Durand-NIVA, I Puillat-Ifremer.

- <u>Relations with other European Projects</u>

JERICO is associated with the FP7 GROOM project on the gliders. The coordinator participated to the GROOM Kick-off meeting in Paris (14th and 15th of November, 2011). A common meeting on gliders was organised in Palma de Mallorca and GROOM coordinators are invited to the JERICO workshops and vice versa.

JERICO is interfaced with SeaDataNet and MyOcean for the data management of JERICO network observatories.

A common approach for the TNA is looked for the I3 and ESFRI marine project as JERICO, Eurofleets, EuroArgo and EMSO. A dedicated workshop will be organised to converge on a TNA marine infrastructure common approach.

Most of the infrastructure of JERICO is involved in the WP4 (Infrastructure WP) of SEASERA. The coordinator of JERICO is invited to participate to workshops on WP4 and WP6 of SEASERA.

JERICO was presented, by the coordinator, to the MARCOMM+ meeting in Brest (October 2012) and to the EUROGOOS general assembly in Hamburg (November 2012).

- Associated partners:

JERICO has not yet invited associated partner to enlarge the consortium. We have signed conventions with PLOCAN in Canarias (Spain), Universita Politechnica de Cataluna (Barcelone, Spain) and GEOECOMAR in Romania.

4.7 WP11 Deliverables and Milestones

- ***Deliverables (WP11)***

Del. no.	Deliverable name	WP n°	Date due proj.month	Actual/Forecast delivery date	Estimated indicative months	Used indicative months	Lead contractor
D11.1	Signed consortium agreement	11	M2	Submitted M8	2	2	IFREMER
D11.2	Quality assurance plan	11	M3	Submitted M6	5	5	HCMR
D11.3	Identity Set	11	M6	Submitted M12	2	2	NIVA
D11.4	First periodic report	11	M18	Submitted M21	12	12	IFREMER
D11.5	Second periodic report	11	M36	To be submitted M39	12	12	IFREMER
D11.6	Final report	11	M48	M48	15	0	IFREMER

The first 3 deliverables shifted because of the warm up starting of the project. For the consortium agreement, all the partners have signed it before end of M4 except one partner who signed M8.

The periodic reports are at least 2 months delayed to be completed after the end of the periodic (and final) reporting.

- ***Milestones list (WP11)***

Del. no.	Milestones name	WP	Date due proj.month	Actual/Forecast delivery date	Lead contractor
MS1	Kick off meeting	WP11	M1	Achieved M1	Ifremer
MS2	First intermediate GA	WP11	M18	Achieved M18	Ifremer
MS3	2nd intermediate GA	WP11	M18	Achieved M36	Ifremer
MS4	Final GA	WP11	M48	M48	Ifremer

List of Panel members

Grant Agremeent 262584
JERICO

Reporting Period PR2
Eligible proposals 0
Selected proposals 0

Infrastructure Short Name	Family_Name	First_Name	Gender	Nation-ality	Home Institution			Email	Additional Information
					Institution Name	Town	Country		
ALL	Colijn	Franciscus	M	DE	Institut für Küstenforschung, Helmholtz Zentrum Geesthacht GmbH (Professor Emeritus)	Geesthacht	DE	franciscus.colijn@hzg.de	
ALL	Dahlin	Hans	M	SE	Swedish Meteorological and Hydrological Institute (Past Director EutoGOOS)	Norrköping	SE	hans.dahlin@gmail.com	
ALL	Dewey	Richard	M	OT	University of Victoria (Associate Director, Science Ocean Networks Canada)	Victoria, Canada	OT	rdewey@uvic.ca	
ALL	Lavin Montero	Alicia	F	ES	Centro Oceanográfico de Santander, Instituto Español de Oceanografía (Director)	Santader	ES	alicia.lavin@st.ieo.es	
ALL	Mortier	Laurent	M	FR	Ecole Nationale Supérieure de Techniques Avancées, also at Université Pierre-et-Marie Curie (Coordinator of FP7 GROOM)	Paris	FR	mortier@locean-ipsl.upmc.fr	
ALL	Newton	Janet	F	OT	Applied Physics Laboratory, University of Washington (Principal Oceanographer, Executive Director of NANOOS, Pacific Northwest regional ocean observing system of IOOS)	Seattle, WA, USA	OT	newton@apl.washington.edu	
ALL	Proctor	Roger	M	OT	University of Tasmania (Director, eMarine Information Infrastructure, Integrated Marine Observing System)	Tasmania, Australia	OT	Roger.Proctor@utas.edu.au	

Infrastructure Short Name	Family_Name	First_Name	Gender	Nation-ality	Home Institution			Email	Additional Information
					Institution Name	Town	Country		
ALL	Zodiatis	George	M	CY	Oceanography Centre, University of Cyprus (Vice Director)	Nicosia	CY	gzodiac@ucy.ac.cy	

List of UserProjects

UserProject Acronym

CIEBIO

Title Calibration and inter-calibration exercise of bio-geochemical sensors

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Marine science/Oceanography

Objectives

The experiment addresses the main scope of performing a calibration and inter-calibration exercise o bio-geochemical sensors to be operationally and routinely deployed on off-shore marine observatories making part on a continuous basis of the marine monitoring network of the Mediterranean Sea.
In particular, the first objective consists in enhancing the accuracy of the in-situ observations on a long term basis of dissolved oxygen, chlorophyll-a and turbidity in the Ligurian basin collected by a multiparametric probes installed on the W1-M3A offshore observing system, constituted by the 'ODAS Italia 1' spar buoy and by a close subsurface mooring.
The opportunity to install carefully calibrated probes will improve the knowledge about the biogeochemical processes in the upper thermocline and can support with real-time quality controlled observations the developing biogeochemical forecast models for both the phases of assimilation and calibration/validation.
The W1-M3A observatory, together with the E1-M3A buoy moored in the south Aegean Sea and the E2-M3A buoy positioned in the South Adriatic, is part of the M3A network, developed within the framework of the MFSTEP project in order to answer to the needs of the Mediterranean Forecasting System of real-time physical and biogeochemical observations of the upper thermocline.
Indeed, the possibility to use sensors calibrated with the same procedures installed on the different sites belonging to the M3A network makes feasible a comparison between the involved sites thanks to an homogenous database in order to verify at a quantitative level the observed differences and to enhance the quality of the in-situ observations.

Achievements

The experiment allowed to obtain a calibration in laboratory and at sea for oxygen and fluorescence sensors. More in details in laboratory, the calibration of oxygen probes has been carried out in a tank (800x500x500 mm) furnished by an Haake N2 immersion circulator and two aerators. Two SBE43 oxygen sensors were tested together and Winkler chemical titration served as the reference standard for evaluating performance characteristics. Five calibration points (at 14°C - 17.7 °C - 20.2 °C) have been chosen and three samples for each point have been used for the Winkler analysis. During the one day cruise onboard the R/V Philia three water samples were acquired for the evaluation of both oxygen and chl-a parameters. The results show an underestimation of oxygen probes respect to Winkler samples with an average difference of about 0.43 ml/l for the laboratory test and 0.49 ml/l for the samples taken at sea. The chl-a calibration were performed by means of two reference of chlorella culture and eight concentration points of uranine solution in laboratory and with water samples at sea. The results show a good agreement between tests in laboratory and in field and allowed to calculate a new scale factor for the analyzed sensors. The need of very steady temperature for the oxygen calibration and of accurate reference concentration for chl-a tests extended the schedule of the experiment and didn't allow the calibration of turbidity sensors that has been postponed and has been performed only by HCMR team.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
POSEIDON	3	POSEIDON CAL	1

UserProject Acronym

ECCECs

Title Emerging Chemical Contaminants in European Coasts

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Other - Environment

Objectives

Within the frame of the EU Water Framework Directive and Marine Framework Strategy, there is the demand of defining priorities for the establishment of Environmental Quality Standard concerning chemical pollution. Moreover, European Union is performing a big and costly effort to establish a harmonized monitor system of chemical pollutants in water.
The project will exploit the unique opportunity of assessing Jerico infrastructures to deliver extremely important information for the future management of EU coastal waters.
By accessing the Cosyna_FB1 (LysBris Ferry) facility managed by HZG for water sampling and analysis, and the MPLS facility managed by CNR for installing water passive samplers developed by RECETOX, the group aims to target two main objectives: (A) to provide a first continental scale, consistent assessment of emerging chemical contaminants occurrence and distribution in European coastal waters, and (B) to assess the budget of selected chemical contaminants in the marine water column and investigate the mechanisms controlling their vertical distribution.

Achievements

Project activities are still in progress. The access to CNR MPLS started in April 2014 and will end in October 2014. The access to COSYNA FB is scheduled from June to August 2014.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	3	MPLS	0.16
COSYNA	1	COSYNA_1 (FB)	0

UserProject Acronym
GABS

Title Deep Glider Acquisitions between Balears and Sardinia *Continuation* N

Scientific Field
Main Field Earth Sciences & Environment
Specific discipline Marine science/Oceanography

Objectives
The proposed research aimed to identify the physical properties of the surface and intermediate water masses between the Balearic Islands and Sardinia. Objectives are, updated from the original proposal
i) study the seasonal variability of the physical properties of surface and intermediate water masses between the Algerian and the Provencal sub-basins;
ii) assess the transport of water, salt and heat through the section;
iii) validate the operational hydrodynamic numerical model of the western Mediterranean implemented at IAMC CNR UOS Oristano (http://www.seaforecast.cnr.it/en/fl/wmed.php) through the use of in-situ and satellite data.
Iv) investigate mechanisms of spring bloom triggering over a frontal area.

Achievements
The main scientific achievement has been to understand the phytoplankton spring bloom onset by a density front. Additionally, a second achievement has been the possibility to work and, consequently, know the colleagues at IMEDEA. This will probably bring to future stricter collaborations between two laboratories located in two opposite sites of the Western Mediterranean. Then achievements regarded the possibility of acquiring oceanographic data during particularly strong Mistral/Sirocco wind events and compare this with different sea/wind conditions. Secondly it was impressive to have data on the area several times in a year avoiding expensive cruises.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CSIC-Glider	1	CSIC-Glider	91

UserProject Acronym

GESEBB

Title Glider campaign to estimate the 3D structure of an Eddy in the Southeastern Bay of Biscay

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Marine science/Oceanography

Objectives

During winter, an anticyclonic eddy is generated in the SE Bay of Biscay that instead of migrating, remains between 3°W and 4°W for several months. This mesoscale structure corresponds to the stationary SWODDY (Slope Water Oceanic eDDY) previously described by Pingree and Le Cann (1992). A recent analysis of a time series of satellite altimetry maps, Sea Surface Temperature maps and outputs from ROMS simulations, in the framework of the ESTIBB project, suggests that these stationary eddies could be generated in the bathymetric and discontinuities of the Cape Breton canyon system, or further to the east, between this canyon and the Ajo and Mayor Capes. Besides this, there are evidences that indicate that these eddies retain plankton, including differentiated densities of ichthyoplankton (early development stages of different fish species spawning in this area).
The main objective of this project is to study, in detail, the characteristics of this eddy, both in the surface and in the vertical, through an extended series of remote sensing, routine in-situ measuring systems (two slope buoys and a HF radar array), two field campaigns with drifting buoys of the User Group and a field campaign using an underwater Glider of the ICSU National Glider Facility (CETSM).
In-situ measurements will be used as well to validate ROMS simulations in the area to allow further research based on model results

Achievements

The main achievement of this mission is that the glider measured with all the sensors and to the desired depth all the required mission duration. A good communication with the pilots allow us to adjust the sampling design every Waypoint; this permitted to make decisions once gather all the last information from the glider itself and from the satellite measurements (IR, visible and altimetry). Campe glider crossed not only an anticyclonic structure but also at less other two cyclones. We are not sure yet that the measured anticyclone is the stationary eddy (the target structure of this mission) but if not this will surely not due to the sampling design, but to an absence of this type of structure during this year.
The main difficulty of this mission is that the first attempt was aborted (4 to 5 July 2013). This inconvenient together with the delay of the start date, due to an unavailability of a free glider-pilot in the desired time period, do not allow us to sample the structure when its surface signal is more evident (April to July). Other difficulty is that the months before the beginning of the mission were very cloudy in the Bay of Biscay and we encountered difficulties to find not cloud-contaminated satellite images. Therefore, we were not sure about the central position of the target structure and we used the first days of the mission (2 transects) to localize the anticyclonic eddy.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
National Glider Facility	1	CETSM	64

UserProject Acronym
GLISS

Title Passive sampling and glider technologies for depth-integrated contaminant concentrations in the ocean

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Other - Environment

Objectives

The proposal is a pilot test aiming to assess the suitability of using gliders as a mode of exposure of passive sampling devices for the measurement of trace level of nonpolar organic substances such as polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). The targeted JERICO facility is the Glider facility at National Oceanographic Centre in Liverpool. The main objectives follow:
1) Evaluate the feasibility of combining glider technology and passive sampling technique to measure chemical contaminant concentrations at sites that are generally difficult to sample
2) Estimate persistent organic pollutant concentrations in waters of the Celtic Sea based sampler-glider exposures
3) Assess the representativeness of the data obtained through glider exposure of the passive samplers

Achievements

A successful deployment of silicone sheet passive sampling devices was undertaken in September-October 2013 near the Isles of Scilly. Samplers were recovered and brought back safely.
The original plan was to use a static sampling site to expose samplers for calibration of the data obtained from the mobile samplers. No static sampling sites could be found in the vicinity of the study site.
A preliminary outcome from this work was to demonstrate that the deployment of passive sampling device for the measurement of trace level organic contaminants at remote sites and for spatially-integrated monitoring is feasible. This work was also an opportunity for NOC to get acquainted with the use of passive sampling methods. The scientific outcome includes the measurement of trace level organic contaminant concentrations measured with silicone polymer. These include polycyclic aromatic hydrocarbons, polychlorinated biphenyls and other chlorinated organics and polybrominated diphenylethers. Since the glider sampling was supposed to monitor a tidal mixing front, we hope the data may be representative of such an environment. Sampling devices have yet to

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
COBS	4	COBS 4 POL GLIDER	42

UserProject Acronym

MEDACID

Title Mediterranean Sea ocean acidification time series experiment.

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Marine science/Oceanography

Objectives

Coastal waters are badly sampled for carbon dioxide and only some CO2 sensors have been recently deployed along USA coastal waters and North of Europe. In this project, the user group is planning to deploy one of its pH sensors having a 0.001 pH unit reproducibility, on one of the buoy of the HCMR POSEIDON networks, placed in an important region as it is the east coastal Mediterranean seawater. Calibration experiments are also planned at the HCMR calibration facility. The project wil add great value to: a) the development of pH measuring system,
b) the monitoring of ocean acidification in the Mediterranean Sea and
c) the JERICO project (both from the point of view of Trans National activities and co-operation and the development of novel and advanced measuring systems).
The main objectives are:
1. Study the daily, monthly, seasonal and inter-annual pH variability in coastal waters.
2. Determination of the main controlling factors affecting the expected acidification.
3. Correlation with physical, chemical and biogeochemical factors controlling the coastal area.
4. Applicability of the pH sensor in coastal areas and for long deployments.
5. Reinforcement of the relations between institutions working in linked activities.

Achievements

Project activities are still in progress. The project started in September 2013 and will last till May 2014

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
POSEIDON	1	POSEIDON BUOYS (1& 2)	8
POSEIDON	3	POSEIDON CAL	1

UserProject Acronym
METRO

Title Mediterranean sediment trap observatory *Continuation* N

Scientific Field
Main Field Earth Sciences & Environment
Specific discipline Marine science/Oceanography

Objectives
The rationale of the METRO project is to advance in the scientific understanding of the Mediterranean Sea carbon cycle and how it is changing over time by measuring settling carbon in three key locations of the Mediterranean Sea, one of them is proposed to be the mooring operated by CNR in the Sicily Channel and offered through the JERICO Trans National Access program.
The mooring will be equipped with a sediment trap , whose data with the one already collected by th observatory will help in characterizing the physical factors that drive the particulate carbon pump on a basin scale (Mediterranean).
The investigation of particle fluxes will allow understanding the processes driving the net flux of CO2 and pollutants from
the atmosphere and the upper water column to the deep sea floor.
The carbon pump causes sequestration of carbon dioxide in the deep sea due to the sinking of particles, thus an accurate quantification of the export flux of particulate organic carbon, and knowledge on physical processes affecting it, is fundamental for the understanding of its magnitude and efficiency.

Achievements Project activities are still in progress. The project started in October 2013 and will last till October 2014.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	3	MPLS	1.07

UserProject Acronym

MOSC

Title Monitoring oxygen in the Sicily Channel

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Global change & Climate observation

Objectives

Recent studies evidenced that climatic changes does not only occur at centenary and millenary scales, but may also occur at much shorter time scales. The Sicily Channel is an intermediate basin between the eastern and the western Mediterranean, which plays a central role in the thermohaline circulation of the Mediterranean.
The main objective of the project is to integrate the dissolved oxygen concentration in the long term time series data in the Sicily Channel to track the water mass variability, the impact of the water mas change on the oxygen content and to estimate the time lag between the eastern (Sicily Channel) and the western (Corsica Chanel) basins of the Mediterranean Sea. This will be done by installing two oxygen sensors at the bottom of the two sills in the Sicily Channel accessing the 2-mooring installations MLPS operated by CNR.

Achievements

Project activities are still in progress. The access to CNR MPLS started in April 2014 and will end in October 2014.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	3	MPLS	0.16

UserProject Acronym

o-DGTSPOCME

Title Organic - Diffusive Gradient in Thin-film for sampling polar organic chemicals in marine environment

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Other - Environment

Objectives

Test the o-DGT samplers for applications in seawater to measure polar organic chemicals like antibiotics;
Deploy the DGT samplers in pilot studies aboard the ferries (collaborated with NIVA) and at the fixed station (collaborated with HZG);
Estimate the water flow rate on the measurement of o-DGT in the flow through sampler and in the estuary;
Compare o-DGT sampler with another passive sampler-ceramic dosimeter;
Investigate the spatial distribution of polar pollutants in the sea between Oslo and Kiel;
Prepare publications and consider a joint bid for further funding embracing wider applications.

Achievements

Achievements: (before we analyze all the samples)
1. Found a better deployment solution for ferrybox under the colleagues from NIVA, that is using plastic net to hold the samplers which can separate the samplers but can also deploy batch of samplers together (which is easy for retrieving later);
2. Deployed and retrieved all the samplers deployed in the ferrybox (6 chambers, retrieving 4 times each chamber), this could give the information of occurrence and spatial distribution of antibiotics in the color line travel route and also the sampler uptake kinetics, the effect of diffusive boundary layer in the chamber, compared results of o-DGT and ceramic dosimeter;
3. Successfully deployed the o-DGT samplers in the fixed station (Elbe river estuary) with the DGT holders designed by colleagues from HZG, and retrieved all the o-DGT samplers. This can give the information of occurrence and samplers uptake kinetics in estuary, the effect of the water movement on the measurement of this sampler.
Difficulties encountered:
1. refill the chambers with pure water after retrieve samplers every time;
2. Lost some dosimeter samplers or the cap opened and the resin come out (not to tight) in the fix station, a better way to protect the dosimeter is needed.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
COSYNA	2	COSYNA_2 (PILE)	20.5
NorFerry	4	color Fantasy	24.5

UserProject Acronym

OXY-COR

Title Integration of dissolved oxygen concentration measurements in the long term time series data in the Corsica Channel

Continuation N

Scientific Field

M a i n F i e l d Earth Sciences & Environment

Specific discipline Global change & Climate observation

Objectives

Integration of the dissolved oxygen concentration in the long term time series data in the Ligurian basin to track the water mass variability, the impact of the water mass change on the oxygen content and to estimate the time lag between the eastern (Corsica Channel) and the western (Dyfamed) part of the Ligurian Sea.

Achievements

Project activities are still in progress. The project started in November 2012. Originally planned to end in October 2013 has been extended to October 2014 to allow the integration of collected data with data from an infrastructure managed by the user.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	4	MPLC	2.8

UserProject Acronym

RAD

Title Radiometry Assessment of optical Data for ocean color applications ***Continuation*** N

Scientific Field

M a i n F i e l d Earth Sciences & Environment

Specific discipline Other - Earth Sciences

Objectives

The term satellite “ocean color” generically identifies remote sensing of the sea in the visible and nea infrared to determine the radiance emerging from the sea from the top-of-atmosphere radiometric signal.
The project called Radiometry Assessment of optical Data for ocean color applications (RAD) is intending to support the assessment of optical radiometric in situ measurement commonly applied to support satellite ocean color multi-mission programs. Primary objective of such activity is to compare manned and autonomous radiometric measurements methods for the generation of high quality in situ radiometric data products. For this purpose the user group is requesting access to the Acqua Alta Oceanographic Tower located in the Northern Adriatic Sea and operated by CNR.

Achievements

Project activities are still in progress. The access to CNR ACQUA ALTA started in March 2014 and will end in
September 2014.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	2	ACQUA ALTA	51

UserProject Acronym
RTC

Title Reference Temperature Calibration

Continuation N

Scientific Field

Main Field Earth Sciences & Environment

Specific discipline Marine science/Oceanography

Objectives

The purpose of the experiment was to acquire expertise, receive guidance, and gain 'hands-on' experience in applying the procedures and Best Practice conventions for the calibration of oceanographic temperature sensors using primary reference standards. The OGS-Oceanographic Calibration Centre (OGS-CTO) is the oceanographic testing and calibration facility of the Department of Oceanography of the OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), located in Trieste (Italy). It provides the scientific and technical infrastructure necessary for high-quality observations of the marine environment using procedures that repeatedly meet recognized international standards of excellence. The ability to calibrate and maintain sea-going instrumentation efficiently is fundamental for the quality of their services. The long-term goal is for HCMR to be able to perform such calibrations on its own premises. This is essential in order to ensure the quality of the data collected by the POSEIDON network (http://poseidon.hcmr.gr) and field surveys performed by HCMR.

Achievements

HCMR has established an in-house calibration laboratory for the evaluation and calibration of its oceanographic sensors and instruments. For the calibration of the temperature sensors, two standard platinum thermometer(s) manufactured by Seabird Electronics, Inc. and a large temperature-controlled bath are employed. However, for proper calibration, the reference standard platinum thermometer(s) should be maintained within specifications by linearization, slope and offset adjustments using primary temperature standards (ITS-90 fixed points). The calibration of oceanographic temperature sensors using primary temperature standards requires expertise, and is a delicate and labour-intensive process, often associated with heavy costs for the operators. The HCMR calibration lab does not currently employ this calibration procedure. The JERICO RTC TNA provided the opportunity to validate and calibrate the two reference thermometer(s which will be used as secondary reference standards for the HCMR calibration laboratory.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
OGSNACObs	5	OGS-CTO	1

UserProject Acronym

SESAM

Title Standardised Electrochemical in Situ Assessment of Metal coatings. *Continuation* N

Scientific Field

Main Field Material Sciences

Specific discipline Knowledge based multifunctional materials

Objectives

The main objectives of the project are to define advantages and limits of innovative protective treatments of metallic artefacts exposed in an urban-marine environment and to standardize a specially adapted electrochemical methodology for assessing their effectiveness in comparison with treatments nowadays used. Among the different treatments tested, a human- and eco-friendly biological treatment which creates protective patinas on copper artefacts will be evaluated. This project will contribute to a better conservation-restoration of metallic artefacts by means of the advance in the application of electrochemical techniques and to extend the knowledge on efficacy of biological interventions. Through this, the overall idea is to enhance research in the field of metal conservation-restoration promoting a dialogue among conservators and scientists, to encourage the use of electrochemical techniques as well as new treatments based on clear scientific and ethical criteria (efficiency, harmless, respect of the aesthetic and historical values) and to enhance conservation activities in their social and economical aspects with the development of ready-to-use treatment kit for conservators-restorers.
The targeted facility is the MLP Genoa, inside the harbour and representing an unique exposure site in an urban-marine environment.
The following aspects will be investigated:
- Selection and characterization of metal standards to be used,
- Definition of the human- and eco-friendly innovative treatments and identification of the best conditions of application,
- Evaluation upon ageing of the developed method on standards coupons and comparison with the most commonly used treatments.
- Standardization of an electrochemical methodology for in situ assessment.

Achievements

Project activities are still in progress. The project started in November 2013 and will last till November 2014.

Installation Use

Infrastructure Short Name	*Installation ID*	*Installation Short Name*	*Amount of Access Delivered*
CNR MPL	5	MPL Genoa	304

List of Users

Grant Agreement ID 262584 **Reporting Period** PR2

UserProject Acronym	Family Name	First Name	Gender	Birth year	Nationality	Resear. status	User Background			Home Institution				User e-mail	New user	Group leader	Remote user	Nr.of visits	Dur,of stay	T+S reimb.	Additional information
							Sci. Field 1	Sci. Field 2	Sci. Field 3	Type	Name	Town	Country								
CIEBIO	Bozzano	Roberto	M	1968	IT	EXP	Engineering & Technology	Information & Communication Technologies	Earth Sciences & Environment	RES	National Research Council of Italy - ISSIA	Genova	IT	roberto.bozzano@cnr.it	Y	Y	N	1	5	Y	
CIEBIO	Pensieri	Sara	F	1981	IT	PGR	Engineering & Technology	Information & Communication Technologies	Earth Sciences & Environment	RES	National Research Council of Italy - ISSIA	Genoa	IT	sara.pensieri@ge.issia.cnr.it	Y	N	N	1	5	Y	
ECCECs	Brumovsky	Miroslav	M	1988	CZ	PGR	Earth Sciences & Environment	Chemistry		UNI	Masaryk University	Brno	CZ	mbrumovsky@mail.muni.cz	Y	N	Y	1	15	Y	Travel grant not yet transferred to user
ECCECs	Klanova	Jana	F	1964	CZ	EXP	Earth Sciences & Environment	Chemistry		UNI	Masaryk University	Brno	CZ	klanova@recetox.muni.cz	Y	Y	Y	0	0	N	
ECCECs	Nizzetto	Luca	M	1975	IT	EXP	Earth Sciences & Environment	Chemistry		UNI	Masaryk University	Brno	CZ	nizzetto@recetox.muni.cz	Y	N	Y	0	0	N	
GABS	Fazioli	Leopoldo	M	1974	IT	EXP	Earth Sciences & Environment			RES	Institute for Coastal Marine Environment of CNR, Unit in Oristano	Oristano	IT	leopoldo.fazioli@cnr.it	Y	N	Y	0	0	N	
GABS	Olita	Antonio	M	1975	IT	EXP	Earth Sciences & Environment			RES	Institute for Coastal Marine Environment of CNR, Unit in Oristano	Oristano	IT	antonio.olita@cnr.it	Y	N	Y	1	4	Y	
GABS	Ribotti	Alberto	M	1968	IT	EXP	Earth Sciences & Environment			RES	Institute for Coastal Marine Environment of CNR, Unit in Oristano	Oristano	IT	alberto.ribotti@cnr.it	Y	Y	Y	1	4	Y	
GABS	Sorgente	Roberto	M	1968	IT	EXP	Earth Sciences & Environment			RES	Institute for Coastal Marine Environment of CNR, Unit in Oristano	Oristano	IT	roberto.sorgente@cnr.it	Y	N	Y	0	0	N	
GESEBB	Caballero Reyes	Ainhoa B.	F	1977	ES	EXP	Earth Sciences & Environment			RES	AZTI-Tecnalia	Pasaia	ES	acaballero@azti.es	N	Y	Y	0	0	N	
GESEBB	Ferrer Rodríguez	Luis	M	1972	ES	EXP	Earth Sciences & Environment			RES	AZTI-Tecnalia	Pasaia	ES	lferrer@azti.es	N	N	Y	0	0	N	

UserProject Acronym	Family Name	First Name	Gender	Birth year	Natio nality	Resear. status	User Background			Home Institution				User e-mail	New user	Group leader	Remote user	Nr.of visits	Dur,of stay	T+S reimb.	Additional information
							Sci. Field 1	Sci. Field 2	Sci. Field 3	Type	Name	Town	Country								
GESEBB	Hernández García	Carlos	M	1972	ES	EXP	Earth Sciences & Environment	Engineering & Technology		RES	AZTI-Tecnalia	Pasaia	ES	chernandez@azti.es	N	N	Y	1	1	Y	
GESEBB	Mader	Julien	M	1975	FR	EXP	Earth Sciences & Environment	Engineering & Technology		RES	AZTI-Tecnalia	Pasaia	ES	jmader@azti.es	N	N	Y	0	0	N	
GESEBB	Rubio Compañy	Anna	F	1977	ES	EXP	Earth Sciences & Environment			RES	AZTI-Tecnalia	Pasaia	ES	arubio@azti.es	N	N	Y	0	0	N	
GLISS	Allan	Ian	M	1978	NO	EXP	Earth Sciences & Environment	Chemistry		RES	Norwegian Institute for Water Research (NIVA)	Oslo	NO	ian.allan@niva.no	Y	Y	Y	1	2	Y	
GLISS	Vrana	Branislav	M	1971	CZ	EXP	Earth Sciences & Environment	Chemistry		UNI	Research Centre for Toxic Compoundsin the Environment (RECETOX)	Brno	CZ	vrana@recetox.muni.cz	Y	N	Y	0	0	N	
MEDACID	Gonzales-Davila	Melchor	M	1961	ES	EXP	Chemistry	Earth Sciences & Environment	Engineering & Technology	UNI	Universidad de Las Palmas de Gran Canaria	Las Palmas de Gran Canaria	ES	mgonzalez@dqui.ulpgc.es	Y	Y	Y	1	5	Y	
MEDACID	Santana-Casiano	Magdalena	F	1965	ES	EXP	Chemistry	Earth Sciences & Environment	Engineering & Technology	UNI	Universidad de Las Palmas de Gran Canaria	Las Palmas de Gran Canaria	ES	magdalena.santana@	Y	N	Y	1	5	Y	
METRO	Calafat-Frau	Antoni	M	1959	ES	EXP	Earth Sciences & Environment			UNI	Universitat de Barcelona	Barcelona	ES	antonicalafat@ub.ed	Y	N	Y	0	0	N	
METRO	Canals-Artigas	Miquel	M	1957	ES	EXP	Earth Sciences & Environment			UNI	Universitat de Barcelona	Barcelona	ES	miquelcanals@ub.edu	Y	N	Y	0	0	N	
METRO	Pedrosa-Pàmies	Rut	F	1988	ES	PGR	Earth Sciences & Environment			UNI	Universitat de Barcelona	Barcelona	ES	rutpedrosa@ub.edu	Y	N	Y	0	0	N	
METRO	Rumin Caparrós	Aitor	M	1985	ES	PGR	Earth Sciences & Environment			UNI	Universitat de Barcelona	Barcelona	ES	arumin@ub.edu	Y	N	Y	2	15	Y	
METRO	Sanchez-Vidal	Anna	F	1977	ES	EXP	Earth Sciences & Environment			UNI	Universitat de Barcelona	Barcelona	ES	anna.sanchez@ub.edu	Y	Y	Y	0	0	N	
MOSC	Ben Ismail	Sana	F	1979	OT	EXP	Earth Sciences & Environment			RES	National Institute of Marine Sciences and Technologies	Tunis	OT	sana.benismail@instm.rnrt.tn	Y	N	Y	1	17	Y	
MOSC	Coppola	Laurent	M	1972	FR	EXP	Earth Sciences & Environment			RES	Observatoire Oceanographique de Villefranche/Mer	Villefranche-sur-Mer	FR	coppola@obs-vlfr.fr	Y	N	Y	0	0	N	

UserProject Acronym	Family Name	First Name	Gender	Birth year	Natio nality	Resear. status	User Background			Home Institution				User e-mail	New user	Group leader	Remote user	Nr.of visits	Dur,of stay	T+S reimb.	Additional information
							Sci. Field 1	Sci. Field 2	Sci. Field 3	Type	Name	Town	Country								
MOSC	Lefevre	Dominique	M	1964	FR	EXP	Earth Sciences & Environment			UNI	Mediterranean Institute of Oceanography	Marseille	FR	Dominique.lefevre@univ-amu.fr	Y	Y	N	0	0	N	
o-DGTSPOCME	Chen	Chang'er	M	1983	OT	PGR	Earth Sciences & Environment	Chemistry		UNI	Lancaster University	Lancaster	GB	c.chen3@lancaster.ac.uk	Y	N	Y	1	11	Y	
o-DGTSPOCME	Jones	Kevin C.	M	1959	GB	EXP	Earth Sciences & Environment	Chemistry		UNI	Lancaster University	Lancaster	GB	k.c.jones@lancaster.ac.uk	Y	Y	Y	0	0	N	
o-DGTSPOCME	Zhang	Hao	F	1964	GB	EXP	Earth Sciences & Environment	Chemistry		UNI	Lancaster University	Lancaster	GB	h.zhang@lancaster.ac.uk	Y	N	Y	0	0	N	
OXY-COR	Coppola	Laurent	M	1972	FR	EXP	Earth Sciences & Environment			RES	Observatoire Oceanographique de Villefranche/Mer	Villefranche-sur-Mer	FR	coppola@obs-vlfr.fr	Y	Y	Y	0	0	N	
OXY-COR	Lefevre	Dominique	M	1964	FR	EXP	Earth Sciences & Environment			UNI	Mediterranean Institute of Oceanography	Marseille	FR	Dominique.lefevre@univ-amu.fr	Y	N	Y	0	0	N	
RAD	Jaccard	Pierre	M	1965	CH	EXP	Earth Sciences & Environment	Engineering & Technology		RES	Norsk Institutt for Vannforskning (NIVA)	Oslo	NO	pierre.jaccard@niva.no	Y	N	Y	2	4	Y	
RAD	Reggiani	Emanuele	M	1973	IT	EXP	Earth Sciences & Environment	Engineering & Technology		RES	Norsk Institutt for Vannforskning (NIVA)	Bergen	NO	emanuele.reggiani@niva.no	Y	N	Y	1	4	Y	
RAD	Sørensen	Kai	M	1950	NO	EXP	Earth Sciences & Environment	Engineering & Technology		RES	Norsk Institutt for Vannforskning (NIVA)	Oslo	NO	kai.sorensen@niva.no	Y	Y	Y	0	0	N	
RAD	Zibordi	Giuseppe	M	1957	IT	EXP	Earth Sciences & Environment	Physics		RES	Joint Research Centre	Ispra	IT	giuseppe.zibordi@jrc.ec.europa.eu	N	N	Y	1	4	N	Travel and activities supported within the framework of the JRC institutional activities related to the validation of satellite ocean color data products.
RTC	Ntoumas	Manolis	M	1980	GR	TEC	Earth Sciences & Environment	Engineering & Technology	Information & Communication Technologies	RES	HCMR	Iraklion, Crete	GR	mntou@hcmr.gr	Y	N	N	1	5	Y	

UserProject Acronym	Family Name	First Name	Gender	Birth year	Natio nality	Resear. status	User Background			Home Institution				User e-mail	New user	Group leader	Remote user	Nr.of visits	Dur,of stay	T+S reimb.	Additional information
							Sci. Field 1	Sci. Field 2	Sci. Field 3	Type	Name	Town	Country								
RTC	Pantazoglou	Fotis	M	1964	GR	TEC	Earth Sciences & Environment	Engineering & Technology	Information & Communication Technologies	RES	HCMR	Iraklion Crete	GR	fotis@hcmr.gr	Y	N	N	1	5	Y	
RTC	Petihakis	George	M	1965	GR	EXP	Earth Sciences & Environment			RES	HCMR	Iraklion, Crete	GR	gpetihakis@hcmr.gr	Y	Y	N	1	5	Y	
SESAM	Albini	Monica	F	1984	IT	PGR	Material Sciences	Earth Sciences & Environment	Chemistry	UNI	Université de Neuchâtel	Neuchâtel	CH	monica.albini@unine.ch	Y	N	N	3	15	N	Travel reimbursement are covered by home institution's own funds as the researcher performed also measurements at CNR-ISMAR for another research project not linked to the facility access.
SESAM	Cano Diaz	Emilio	M	1971	ES	EXP	Material Sciences	Humanities	Chemistry	RES	CENIM-CSIC, Departamento de Ingeniería de Superficies, Corrosión y Durabilidad	Madrid	ES	ecano@cenim.csic.es	Y	Y	N	1	3	Y	
SESAM	Joseph	Edith	F	1977	FR	EXP	Chemistry	Material Sciences	Life Sciences & Biotech	UNI	Université de Neuchâtel	Neuchâtel	CH	edith.joseph@unine.ch	N	Y	N	1	5	Y	Access was already provided during a previous project, not related to JERICO TNA.