



JERICO Final General Assembly Report 28th April 2015

Grant Agreement n° 262584

Project Acronym: JERICO

Project Title: Towards a Joint European Research Infrastructure network for Coastal Observatories

Coordination: P. Farcy, IFREMER

jerico@ifremer.fr, www.jerico-fp7.eu:

Authors: I. Puillat, N. Beaume, P. Farcy

Involved Institution: Ifremer

Version Date: 11-May-2015







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I] Introduction

JERICO Research Infrastructure (RI) is the coastal component of the European marine observing system, and is funded by the FP7 program and recently extended through a newly awarded H2020 project (JERICO-NEXT). It gathers 33 partners from 15 European countries. This research infrastructure aims at further developing, harmonizing and integrating nationally funded marine observing systems, collecting physical, chemical and biological parameters from different platforms (ferryboxes, fixed platforms, gliders, HF radars, benthic systems ...).

The General Assembly was the first part of this “JERICO week”. In this report will be listed all relevant information (agenda, participant list, etc) and the slides of each presentation.

The JERICO Management Team would like to thank again everyone who participated to this final General Assembly and to the JERICO week.

Agenda

Time slot	Topic	Lead
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Tuesday, 28th of April – General Assembly		
07:30-08:15	Bus to Ifremer (Stop at Ibis Styles & Railway station)	
08:30-09:00	GA Welcome Speeches	A. Dosdat, P. Farcy
09:00-10:40	General Assembly: - WP 2 (09:00 – 09:20): <i>Strengthening regional and trans-regional activities</i> - WP 3 (09:20 – 09:40): <i>Harmonizing technological aspects</i> - WP 4 (09:40 – 10:00): <i>Harmonizing operation and maintenance methods</i> - WP 5 (10:00 – 10:20): <i>Data management and distribution</i> - WP 6 (10:20 – 10:40): <i>Outreach</i>	H. Wehde (IMR) W. Petersen (HZG) G. Petihakis (HCMR) R. Nair (OGS) S. Keeble (BL)
10:40-11:00	<i>Coffee break</i>	



11:00-12:50	<p>General Assembly:</p> <ul style="list-style-type: none"> - WP 7 (11:00 – 11:20): <i>Service and data access</i> - WP 1 (11:20 – 11:50): <i>A Common Strategy</i> - WP 8 (11:50 – 12:20): <i>Transnational access to coastal observatories</i> - WP 9 (12:20 – 12:50): <i>New methods to assess the impact of coastal observing systems</i> 	<p>L. P. de la Villéon (IFREMER)</p> <p>P. Morin (CNRS)</p> <p>S. Sparnocchia (CNR)</p> <p>T. Vukicevic (CMCC)</p>
12:50-14:00	Lunch	
14:00-15:30	<p>General Assembly:</p> <ul style="list-style-type: none"> - WP 10 (14:00 – 14:30): <i>Improved existing and emerging technologies</i> - WP 11 (14:30 – 15:30): <i>Management</i> 	<p>G. Nolan (MI)</p> <p>P. Farcy (IFREMER)</p>
15:30-15:50	Coffee break	
End of General Assembly meeting		



Participant List

Family name	Surname	Institution	Email @
Almeida	Sara	IH	sara.almeida@hidrografico.pt
Artigas	Luis Felipe	CNRS-ULCO	Felipe.Artigas@univ-littoral.fr
Bachelier	Céline	DT INSU CNRS	celine.bachelier@dt.insu.cnrs.fr
Bastianini	Mauro	CNR	mauro.bastianini@ismar.cnr.it
Beaume	Nolwenn	IFREMER	nolwenn.beaume@ifremer.fr
Brumovsky	Miroslav	RECETOX	brumovsky@recetox.muni.cz
Buch	Erik	EuroGOOS	erik.buch@eurogoos.eu
Chapalain	Georges	Cerema/LGCE	Georges.Chapalain@cerema.fr
Charria	Guillaume	IFREMER	guillaume.charria@ifremer.fr
Coppola	Laurent	CNRS	coppola@obs-vlfr.fr
Delauney	Laurent	IFREMER	Laurent.delauney@ifremer.fr
Durand	Dominique	NIVA/IRIS	dodu@iris.no
Farcy	Patrick	IFREMER	patrick.farcy@ifremer.fr
Fuda	Jean-Luc	CNRS/INSU	jean-Luc.fuda@dt.insu.cnrs.fr
Galea	Anthony	UoM	anthony.j.galea@um.edu.mt
Gaughan	Paul	MI	paul.gaughan@marine.ie
Gorringe	Patrick	EuroGOOS	patrick.gorringe@eurogoos.eu
Grémare	Antoine	CNRS/UB	antoine.gremare@u-bordeaux
Haller	Michael	HZG	michael.haller@hzg.de
Kaitala	Seppo	SYKE	seppo.kaitala@ymparisto.fi
Keeble	Simon	BLIT	simon@bluelobster.co.uk
Krieger	Magali	IFREMER	magali.krieger@ifremer.fr
Laakso	Lauri	FMI	Lauri.Laakso@fmi.fi
Lavin	Alicia	IEO	alicia.lavin@st.ieo.es
Lefebvre	Alain	Ifremer	alain.lefebvre@ifremer.fr
Mader	Julien	AZTI	jmader@azti.es
Mohlin	Malin	SMHI	Malin.Mohlin@smhi.se
Morin	Pascal	CNRS	pmorin@ipev.fr
Nair	Rajesh	OGS	rnair@ogs.trieste.it



Newton	Janet	Univ Washington	newton@apl.washington.edu
Nizzetto	Luca	NIVA	luca.nizzetto@niva.no
Nolan	Glenn	MI	glenn.nolan@marine.ie
Ntoumas	Manolis	HCMR	mntou@hcmr.gr
Pavanello	Giovanni	CNR	giovanni.pavanello@ge.ismar.cnr.it
Perivoliotis	Leonidas	HCMR	lperiv@hcmr.gr
Petersen	Wilhelm	HZG	wilhelm.petersen@hzg.de
Petihakis	George	HCMR	gpetihakis@hcmr.gr
Petit de la Villéon	Loic	IFREMER	Loic.Petit.De.La.Villeon@ifremer.fr
Pichereau	Sylvie	IFREMER	sylvie.pichereau@ifremer.fr
Puillat	Ingrid	IFREMER	ingrid.puillat@ifremer.fr
Quentin	Céline	CNRS	celine.quentin@mio.osupytheas.fr
Reggiani	Emanuele	NIVA	ere@niva.no
Ribotti	Alberto	CNR	alberto.ribotti@cnr.it
Riminucci	Francesco	CNR	francesco.riminucci@bo.ismar.cnr.it
Robakiewicz	Małgorzata	IBW PAN	marob@ibwpan.gda.pl
Romagnan	Jean-Baptiste	UPMC	romagnan@obs-vlfr.fr
Salvetat	Florence	IFREMER	florence.salvetat@ifremer.fr
Sanfilippo	Luca	SYSTEA SpA	luca.sanfilippo@systea.it
Seppälä	Jukka	SYKE	jukka.seppala@ymparisto.fi
Slabakova	Violeta	IO-BAS	v.slabakova@io-bas.bg
Sørensen	Kai	NIVA	kai.sorensen@niva.no
Sparnocchia	Stefania	CNR	stefania.sparnocchia@ts.ismar.cnr.it
Taupier-Letage	Isabelle	CNRS	isabelle.taupier-letage@ifremer.fr
Tintore	Joaquin	IMEDEA	jtintore@uib.es
Vukicevic	Tomislava	CMCC	tomislava.vukicevic@cmcc.it
Wan	Zhenwen	DMI	zw@dm.dk
Wehde	Henning	IMR	henning.wehde@imr.no



II] WP2 Presentation (H. Wehde, IMR)




Strengthening regional and trans-regional activities
WP2

Henning Wehde | Institute of Marine Research | henning@imr.no
www.jerico-gt.eu

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- 1) *Tasks and % of completion -*
- 2) *List of partners*
- 3) *Deliverables and milestones*
- 4) *Main difficulties*
- 5) *Main significant results*


Tasks and % of completion -

Task 2.1: State of the Art in Coastal observing systems
Henning Wehde - IMR, SMHI, Deltares, IH, AZTI, INGV, IO-BAS

Task 2.2 Cross regional integration and demonstration
Irene Lake - SMHI, IMR, Deltares, IH, AZTI, INGV, IO-BAS

With the delivery of D-2.5 now the task are 100 % completed

List of partners



• Arctic ROOS	IMR
• BOOS	SMHI
• NOOS	Deltares and IMR
• IBI ROOS	IH and AZTI
• MONGOOS	INGV
• Black Sea	IO-BAS

Deliverables and milestones

D-2.1 Report on existing observation network from all ROOSs

D-2.2 Report on recommendations for future research and developments for filling gaps in the areas where observations are unattainable due to lack of best practice or technologies from all ROOSs

D-2.3 Integrated Pan European Atlas/first report on Coastal Observing systems

D-2.4 Demonstration of the feasibility of joint trans-regional product production Transports and E-HYPE

D-2.5 Integrated Pan European Atlas/second report on Coastal Observing systems, update at the end of the project



Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
2	4	10	15	20	25
2	5	10	15	20	25
3	5	10	15	20	25

- The first deliverables Deliverables were late
- Contribution to the sustainability
- Report on the Atlas:
 - development and implementation of an online tool outside the DeW

Main significant results

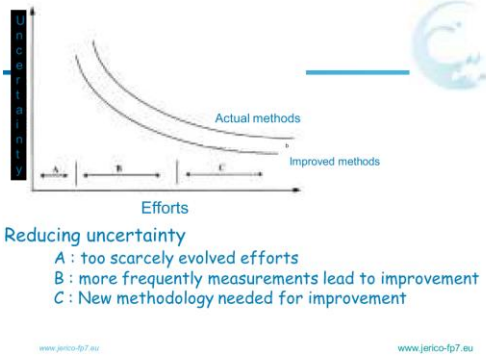
D-2.1 Report on existing observation network from all ROOS

- A review of the present status of the observation systems provided by the regional Alliances of the European Global Ocean observing system (EuroGOOS).
- Arctic ROOS
- NOOS
- BOOS
- IBIROOS
- MONGOOS
- Black Sea GOOS



D-2.2 Report on recommendations for future research and developments

- The main aim for this report was to provide an overview of the
 - main challenges the existing observational systems are facing to provide an integrated status of the marine environment
 - to identify knowledge gaps, that are recommended to fill within the upcoming years.



Periods important for processes

Period	1	2	3	4	5	6	7	8	9	10
Physical oceanography										
Chemical										
Biological										
Ecological										
Atmospheric										
Hydrological										
Management plan										

D2.3 Integrated Pan European Atlas/first report on Coastal Observing systems

The main aim for this deliverable is to provide an overview over and reference to the existing European observing systems. The aim is to include all the available observing systems in the seas around Europe.

Code	Name	Geography	Implementation
ATLAS	Atlantic Time-series Analysis and Assessment	ATLANTIC OCEAN	1992-2010
BOOS	Baltic Ocean Observing System	BALTIC OCEAN	2002-2010
IBIROOS	Iberian Basin Integrated Research Observing System	IBERIAN BASIN	2002-2010
MONGOOS	Mediterranean and Black Sea Ocean Observing System	MEDITERRANEAN AND BLACK SEA	2002-2010
NOOS	North Atlantic Ocean Observing System	NORTH ATLANTIC OCEAN	2002-2010

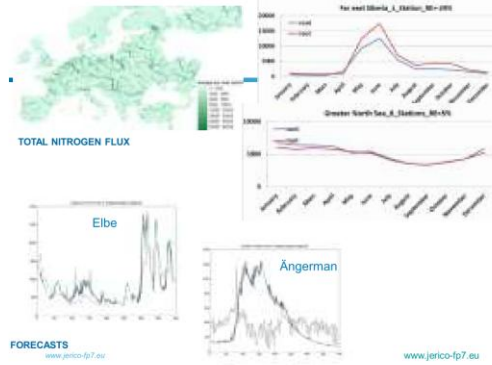


D2.4 Demonstration of the feasibility of joint trans-regional product production Transports: E-HYPE

- This report focused on:
- 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.
- Demonstration of a possible approach to a pan-European transport product.
- The hydrological data is intended as an improvement to the discharge climatologies and constant nutrient concentrations traditionally used by oceanographers as input to physical and biogeochemical ocean models.
- The transport calculations are useful for customers interested in movement of water masses e.g. oceanographers, environmental organisations or fisheries.

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D2.5 Integrated Pan European Atlas/second report on Coastal Observing systems

The main aim for this deliverable was to provide an updated overview over and reference to the existing European observing systems at the end of the project.

- Report and outside of DoW an online tool



Online tool for Atlas D-2.5



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Online Atlas D-2.5



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III] WP3 Presentation (W. Petersen, HZG)



WP3: Harmonizing Technological Aspects Table of content

- 1) **Main Objectives**
- 2) **Tasks and % of completion -**
- 3) **List of partners**
- 4) **Deliverables and milestones**
- 5) **Main difficulties**
- 6) **Main significant results**

WP3: Harmonizing Technological Aspects Tasks

Tasks divided by platforms:

- Task 3.1. FerryBox Systems
- Task 3.2 Glider
- Task 3.3 Fixed Platforms

WP3: Main Objectives :

- To provide a common base for the operational use of FerryBoxes, gliders, fixed platforms along European coasts **100%**
- To review the current status of existing systems in operational use in European seas **100%**
- To define the best technical practices for compatible, robust and cost-effective systems **90**
- To define procedures for harmonizing and merging quality assessed FerryBox and Fixed Platform data at regional (ROOS) level (*partly solved*)
- To define procedures and technological solutions for integration and testing of new sensors on these systems (*partly solved*)

WP3 List of Participants

Participant number **	Participant short name **	Person-months per participant
1	IFREMER	2.80
2	SVNZE	4.80
3	ENVPAN	5.80
5	NIVA	5.80
8	DGS	4.80
9	CNR	7.80
11	HCAR	8.80
12	NERC	13.80
14	HZG	16.80
16	SRNA	3.80
16	CEPAG	5.80
17	SMH	4.80
18	CSC	5.80
20	MI	2.80
22	TECNALIA-AZI	3.70
23	INSUONRS	7.80
26	PUERTOS	6.80
	Total	934.20

WP3 Workshops:

- 1st FerryBox workshop (30-31 August 2011 at HZG)
- joint workshop with WP4 about best practise for Fixed Platforms (Rom 2012)
- jointed workshop with GROO and EGO about Gliders (Majorca 2012)
- joint workshop with WP4 about best practise for all platforms (Crete 2012)
- 2nd FerryBox workshop in April 2013 in Helsinki
- joint workshop with WP4 on best practice for fixed platforms (Lisbon, 2014)



WP3: Deliverable

Deliverables (cont)

WP3: Main Difficulties

- too many partners with different responsibility and engagement
- large number of fixed platform and very inhomogeneous installation → difficulties in homogenization and development of clear recommendations for best practice
- partly overlap with WP4 regarding the content of the deliverables
- partly overlap with GROOM project regarding gliders
- merging of quality accessed data from different fixed platforms not completed

WP3: Main Significant Results (FerryBox task)

- FerryBox Task:**
- regular updated overview about active FerryBox lines, disseminated in www.ferrybox.org
 - extensive exchange of experience and knowledge between FerryBox operators
 - test of new sensors with regard to biogeochemistry and exchange of knowledge between partners
 - joint activity with WP4 → detailed and comprehensive Handbook of best practise of FerryBox operation

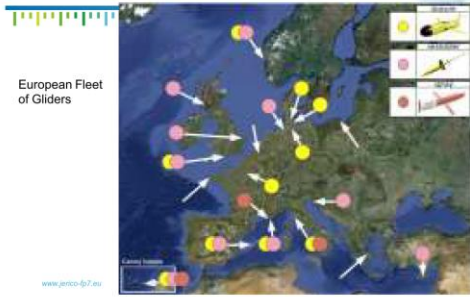
WP3: Main Significant Results FerryBox Task (cont)

WP3: Main Significant Results Glider Task (con)

- Glider Task:**
- close cooperation and exchange with the later started glider project GROOM.
 - regular exchange of experience and knowledge between Glider operators
 - Comprehensive overview about the glider observatories and operations within Europe including cost analysis
 - joint activity with WP4 → Handbook of best practise of Glider operation including further references (further details) to GROOM deliverables



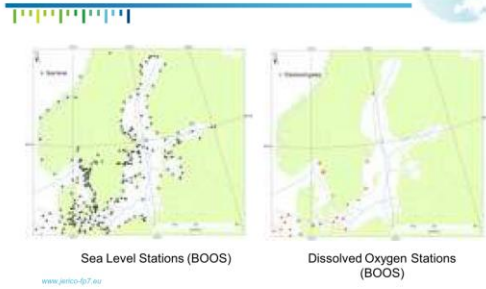
**WP3:
Main Significant Results (Glider task)**



**WP3:
Main Significant Results Fixed Platform Task**

- Fixed Platform Task:
- Comprehensive database and regular updated overview about the Fixed Platform and measured platform
 - joint activity with WP4 → Handbook of best practise of Fixed Platform operation
- www.jerico-g7.eu

**WP3:
Main Significant Results Fixed Platform Task
(con)**





IV] WP4 Presentation (G. Petihakis, HCMR)



HARMONIZING OPERATION AND MAINTENANCE METHODS
WP4
 George Petihakis | HCMR | gpetihakis@hcmr.gr
 www.jerico-g7.eu

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Tasks and % of completion

Task 4.1 Calibration
 Subtask 4.1.1. Physical sensors
 Subtask 4.1.2. Optical sensors
 Subtask 4.1.3. Chemical sensors
 % completion **120%**

Task 4.2 Bio fouling prevention
 Subtask 4.2.1. Physical sensors
 Subtask 4.2.2. Optical sensors
 Subtask 4.2.3. Chemical sensors
 % completion **140%**

Task 4.3 End to end quality assurance
 Subtask 4.3.1. Fixed Platforms
 Subtask 4.3.2. FerryBox
 Subtask 4.3.3. Gliders
 Subtask 4.3.4. Running Costs
 % completion **85%**

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List of partners

Number	Participant short name	Person-months per participant
1	IFREMER	3.00
2	SYKE	2.00
3	NIVA	3.00
4	OGS	6.00
5	CNR	7.00
6	HCMR	17.00
7	NERC	10.00
8	HZG	8.00
9	MURAM	2.00
10	CEFAS	4.00
11	SARE	4.00
12	CSIC	5.50
13	MI	2.00
14	TECNALIA-ACTI	2.50
15	CHRISINSU	3.00
16	IH	3.00
17	PUERTOS	6.50
TOTAL		84.50



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Deliverables and milestones

Del. no.	Deliverable name	Delivery date DOW	Date Delivered	Man Months	Lead beneficiary
D4.1	Report on existing facilities	M18	M20	10.00	HZG
D4.2	Report on calibration best practices	M36	M36	20.00	HZG
D4.3	Report on biofouling prevention methods	M36	M36	20.00	CNR
D4.4	Report on best practice in operation and maintaining	M42	M48	20.00	HCNR
D4.5	Report on running costs of observing systems	M42	M43	14.50	CEFAS

MS. no.	Milestones name	WP n°	Delivery date DOW	Date Delivered	Lead contractor
MS15	Constitution of a permanent Working Group within JERICO for Calibration Activities	4	M30	M43	HCNR

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Main difficulties and positive lessons

- New consortium → hard to know the expertise of the partners during the proposal drafting period
- 4 years is a long period and difficult to maintain partner's interest
- Some partners never showed up → FUERTOS had 6mm
- Although the methodology approach was correct the 3 platforms are at very different level of harmonisation

- High level of expertise
- Workshops proved to be extremely interesting
- Enthusiasm → more workshops → Biofouling prevention

- Dedicated funds for workshops
- More exercises
- Try to find enthusiastic people
- More interaction with industry

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Main significant results

Task 4.1 Calibration

Sensor approach

Exercises

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Exercises

Main significant results

Task 4.1 Calibration

Date	Title	Location
February 2012	1 st Calibration and biofouling prevention of optical sensors & sharing of calibration facilities	SYKE, Helsinki
October 2012	2 nd Calibration exercise, sharing of calibration facilities	IFREMER, Brest
Sept-Oct 2013	Intercomparison of O2 sensors in situ and in lab	CNRS, Villefrance
TNA Exercises 1 OGS and 2 HCMR		

A Permanent Working Group Established

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Main significant results

Task 4.2 Biofouling prevention

Sensor approach

During the 2nd JERICO WP3 & WP4 common workshop on Fixed Platforms in Rome 29th (February – 1st March 2012) it was decided to design and implement a common experiment

BIOFOULING MONITORING PROGRAM (BMP)

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Main significant results

Task 4.2 Biofouling prevention

Coordination: Marco Faimali (ISMAR- CNR)

Partners: HCMR
AZTI
IFREMER
CEFAS
SMHI
SYKE

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Main significant results

BMP Box

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Main significant results - BMP

- Comparing the data from the different sampling sites, we can learn more about the reasons that determine the complex process of fouling colonization
- Despite the differences in fouling composition among sampling sites, some factors played always a key role in the settlement of organisms
- Such factors included the light availability, the materials employed and its physical nature
- Organism's settlement is a process affected by many chemical, physical and biological factors
- Field experiments highlight how complex and numerous are the interactions among factors, that can not mimicked in the laboratory
- **Further joint research have to be carried out in this field in order to understand all the interactions involved and to obtain a better characterization of settlement behavior and fouling process**

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Main significant results

Workshops

Task 4.3 End to end quality assurance

Platform approach

Date	Title	Location
30 -31 August 2011	1 st JERICO WP3 & WP4 common workshop on FerryBox	HZG, Hamburg
29 th February – 1 st March 2012	2 nd JERICO WP3 & WP4 common workshop on Fixed Platforms	CNR, Rome
22 – 23 May 2012	3 rd JERICO WP3 & WP4 common workshop on Gliders	IMEDEA, Palma
4-5 October 2012	4 th WP3 & WP4 common workshop on Best Practices	HCMR, Heraklion
23rd April 2013	WP3 & WP4 status workshop	SYKE, Helsinki
13 th 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

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Main significant results

Task 4.3 End to end quality assurance Best Practices

- Very difficult task
- Great variability between the 3 platforms
 - Gliders are more or less harmonised
 - FerryBoxes are following
 - FixedPlatforms → nightmare

Report on best practice in conducting operations and maintaining D4.4

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Main significant results

Task 4.3 End to end quality assurance Best Practices

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Main significant results

Task 4.3 End to end quality assurance Best Practices

Gliders

- FerryBox
- Fixed Platforms
 - Many different designs produced both as off the shelf products as well as custom builds.
 - In most cases, designs follow a fit-for-purpose approach adopted for the environment in which they are placed
 - The environmental constraints in the coastal environment are high
 - The variability of sensors that can be placed on board Fixed Platforms is very high

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Main significant results

Task 4.3 End to end quality assurance Running Costs

- The cost of setting up and operating such systems can be significant
- It is the first time that costs are recorded for
 - Fixed Platforms
 - FerryBoxes
 - Gliders
 - Calibration labs

D4.3.4 –Running costs of coastal observatories

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Main significant results

Task 4.3 End to end quality assurance Running Costs

There was a large variability in costs between laboratories reflecting the different types of platforms and parameters being measured

Initial investment costs:	Annual running costs:
-Gliders 222,545 €	-Gliders 184,014 €
-FerryBoxes 110,298 €	-FerryBoxes 139,358 €
-Fixed Platforms 86,526 €	-Fixed Platforms 90,529 €

A large proportion of the total annual running costs (27%) of fixed platforms is associated with boat charter

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See you in JERICO NEXT

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V] WP5 Presentation (R. Nair, OGS)




DATA MANAGEMENT AND DISTRIBUTION
WP5

Rajesh Nair | OGS, Italy | r.nair@ogs.it
Loïc Petit De La Vilhonn | IFREMER, France | Loic.Petit.De.La.Vilhonn@ifremer.fr

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Tasks and % of completion

Task 5.1: Create value for measured data
Activity description: development of a procedural framework for assigning uncertainties to some measured parameters.
% completed: 100%.

Task 5.2: Harmonization of delayed-mode data management procedures with SeaDataNet
Activity description: development of the JERICO data management framework for dealing with delayed-mode data.
% completed: 100%.

Task 5.3: Harmonization of real-time data management procedures with MyOcean/EuroGOOS
Activity description: development of the JERICO data management framework for dealing with real-time data.
% completed: 100%.

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List of partners

Task 5.1: Create value for measured data
Task Leader: OGS.
Other partner involved: HCMR.

Task 5.2: Harmonization of delayed-mode data management procedures with SeaDataNet
Task Leader: IFREMER.
Other partners involved: HCMR, MUMM, OGS.

Task 5.3: Harmonization of real-time data management procedures with MyOcean/EuroGOOS
Task leader: IFREMER.
Other partners involved: CNR, NIVA, IMR, HCMR, PUERTO, SMHI.

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Deliverables and milestones

DELIVERABLES

- D5.1: "DM Data Management Handbook, V1"
- D5.2: "RT Data Management Handbook, V1"
- D5.3: "First data management report"
- D5.4: "Guidelines for Uncertainty"
- D5.5: "Report on uncertainty for selected key parameters: temperature, salinity and chlorophyll-a"
- D5.6: "DM Data Management Handbook, V2"
- D5.7: "Second data management report"
- D5.8: "RT Data Management Handbook, V2"

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Deliverables and milestones

MILESTONES

- MS16: "First JERICO management Handbook"
- MS17: "Launch of Service Access"
- MS18: "Report on activities"
- MS19: "Final JERICO management Handbook"

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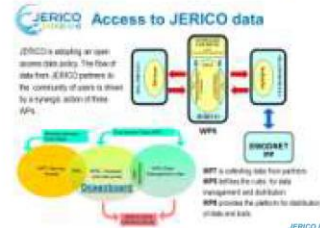
Main difficulties

- Late start.
- Slow responses and feedbacks.
- Poor communication amongst partners.
- Difficulty in accessing source documents.
- Diversity of platforms, sensors and parameters.
- Diversity of data handling formats, procedures and practices.
- Interaction and coordination with SeaDataNet and MyOcean.

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Main significant results

A synergistic framework for handling data



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Main significant results

Innovation: the JERICO tag, standardized descriptions of observing infrastructure using the OGC's SWE suite and the SensorML format

```

Monitoring with 14 sensors (atmospheric, sea-surface and water-column)
<!-- SensorML description -->
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Main significant results

Examples of leading systems feeding the JERICO near-real-time data stream



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Main significant results

- Fully functional partnerships with SeaDataNet and MyOcean → supports the "open & free" data policy paradigm; ensures compatibility, interoperability, and the implementation of common data handling practices for coastal marine data in the European context.
- Added impetus to the contribution of coastal marine data to SeaDataNet and MyOcean → enhancing the availability and circulation of European coastal marine data.
- Establishment of a proactive approach to address "in-house" data issues → cooperation with SeaDataNet and MyOcean is allowing JERICO to participate actively in establishing Europe's database and management infrastructure for coastal marine data.

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Main significant results

Del. no.	Deliverable name	Status	MIL no.	Milestone name	Status
DS.1	DM data management handbook V1	Delivered	MS16	First JERICO management Handbook	OK
DS.2	RT data management handbook V1	Delivered	MS17	Launch of Service Access	OK
DS.3	First data management report	Delivered	MS18	Report on activities	OK
DS.4	Guidelines for uncertainty	Delivered	MS19	Final JERICO management Handbook	OK
DS.5	Report on uncertainty for selected key parameters: temperature, salinity and chlorophyll-a	Delivered			
DS.6	DM data management handbook V2	Delivered			
DS.7	Second data management report	Delivered			
DS.8	RT data management handbook V2	Delivered			

Thank you

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VI] WP6 Presentation (S. Keeble, BL)



WP6: Outreach

David Mills (Cefas), Simon Keeble (Blue Lobster), Aldo Drago (UoM), Nicki Villiers (Dellares), Mark Hartman (NOC), Joaquin Tintore (CSIC), Jo Foden (Cefas)

David Mills | Cefas | david.mills@cefas.co.uk

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Table of contents

- 1) **Tasks and % of completion**
- 2) **Tasks**
- 3) **Deliverables and milestones**
- 1) **Summary**

Tasks and % of completion

- 6.1 End-user products and services (Community Hub, Datatool, public display) 95%
- 6.2 Jerico OceanBoard (Professional & public and educational glider tool) 100%
- 6.3 Summer schools (Malta 2013 & The Netherlands 2014) 100%

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WP6 tasks

List of deliverables						
Deliverable number ¹⁾	Deliverable Title	Lead beneficiary number	Estimated indicative person-months	Status ²⁾	Dissertation link ³⁾	Delivery date ⁴⁾
D6.1	Design and launching of JERICO OceanBoard V0	18	8.00	F	PU	8
D6.2	Jerico Community Hub	18	5.00	F	PU	12
D6.3	Summer school 1	7	4.00	R	PU	20
D6.4	Development and implementation of suite of web-based interactive tools	18	8.00	D	PU	24
D6.5	Summer school 2	10	4.00	R	PU	28
D6.6	Final version of JERICO-OceanBoard	18	8.00	F	PU	30
		Total	33.00			

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Task 6.1 end-user products & services

Sub-task 6.1.1 Build Community Hub

Sub-task 6.1.2 Development of Jerico Datatool

Sub-task 6.1.3 Jerico public display monitor

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Jerico Community Hub

During the course of the project:
 27k website visits from 168 countries
 8% from mobile devices – increasing.
 Average time on site is 3:00 minutes.

Problems
 Further outreach could have been achieved with social media.
 Content missing.
 Website is functional but styles / platforms change a lot in 4 years!



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Jerico Datatools



The Datatools were developed on the EMECO platform and embedded into the Jerico website

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Task 6.2 Oceanboard

Sub-task 6.2.1 Jerico PROF
Sub-task 6.2.2 Jerico PUB
 D6.1: Launch OceanBoard, completed M6
 D6.6: Final version OceanBoard, completed M30

OUTPUTS
 • Articles from 6 regions
 • 44 Articles – average 1000 hits, max 27500

Main Problem – Limited input from partners



Use the JERICO OceanBoard to get the latest news, reports, updates and updates on European coastal monitoring activities and operational oceanography in general. Get involved and help shape the future of the OceanBoard and global datasets, and support in published news articles on marine monitoring.

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Task 6.2 Oceanboard

Sub-task 6.2.2 Educational tool



Task 6.3 summer schools

Sub-task 6.3.1 Jerico summer school 1; Malta
 D6.3 Summer school 1 completed M27; Milestone 20: Report completed M28

1st Summer school 8th-13th July, University of Malta
 Operational Oceanography in the 21st Century – The Coastal Seas

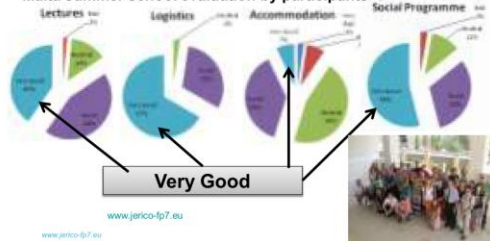
- 84 applicants,
- 28 countries: Europe, Middle East, South America, Asia,
- 35 participants selected.

PROGRAMME

- Overview on operational oceanography
- Coastal observatories: COSYNA, sensors & platforms, FerryBox, ROVs
- MyOcean
- Numerical modelling techniques
- Data Management; data exchange, QC, data format, climatologies, SeaDataNet
- Visualisation and analysis of time series data
- Applications; satellite data, oil spill models, Jerico Datatool
- Excursion to HF radar

Task 6.3 summer schools: Malta

Malta summer school evaluation by participants



Task 6.3.2 Deltares Summer School (14-20 June 2014)

Sub-task 6.3.2 Jerico summer school 2; Deltares, The Netherlands
 D6.5 Summer school 2 M39 (July 2014), Milestone 21: Report M40 (Aug 2014)

- Applicants' regional spread: Poland (5), Netherlands (1), Chile (1), Italy (1), Argentina (1), Russia (1, Caspian Sea), Spain (1)
- Applicants' current occupation; 7 MSc-level & 4 PhD
 PhD student / research assistant (8), Research fellow (1), Post-doc (1), DM Specialist (1)
- Gender: F (6), M (5)

Data to decisions

Marine monitoring > data > information > knowledge
 Monitoring & policy use (data acquisition)
 Version control (data management)
 EU portal landscape (data dissemination)
 From points to maps (data analysis)
 Model coupling (data assimilation)
 4th paradigm, Big data (data interpretation)





Task 6.3 summer schools: Deltares

Deltares summer school programme	
Saturday	Arrival, icebreaker and dinner 1 evening visit to Sand Engine coastal observatory
Sunday	Data & information for monitoring [Cefas et al., FxO3] » MSFD, EMECO, monitoring strategy and networks
Monday	Data interpolation » DIVA/DINEOF [University de Liege, Prof. J-M Beckers]
Tuesday	Data dissemination » [EMODnet/SDN/MyOcean/EuroGOOS, EuroBIS] » Co-organized with Delft Software Days (extra audience)
Wednesday	Data management and curation » DOI, DataCite, Versioning [STU datacenter, OpenEarth]
Thursday	Data assimilation » [OpenDA]
Friday	Data processing (departure at lunch) » Web Processing Service [EMECO et al., OpenEarth]

Task 6.3 summer schools

Low registration rates (why)

- Malta is a nicer location for a summer school than the Netherlands.
- Deltares did not subsidise student travel while the Malta 2013 summer school did.
- The targeted coastal community was predominantly at the ICCE conference (int. conference on coastal engineering) that very week.

Evaluation highlights

(Scored out of 10)

- Topic – 9.4
- Balance – 8.5
- Social – 9.5
- Fieldwork 9.7
- Lectures – 7 to 9



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Summary

6.1 End-user products and services - (Community Hub, Datatool, public display)

- Web site well received and used
- Community Hub – established
- Datatool – up and running
- Public display – loss of Ferry route prevented completion
- 6.2 Jerico OceanBoard - (prof & public and educational glider tool)
 - OceanBoard Facility established but required more input
 - Educational tool completed and deployed

6.3 Summer schools - (Malta 2013 & The Netherlands 2014)

- Completed
- High degree of student satisfaction
- Lesson learnt about advertising and the positive impact of subsidising attendance

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VII] WP7 Presentation (L. Petit De La Vileon, IFREMER)



WP 7: Service and data access
Final General Assembly 2015-April-27/28
 Letic Petit de la Vileon | IFREMER | petit@ifremer.fr
 www.jerico-tp7.eu

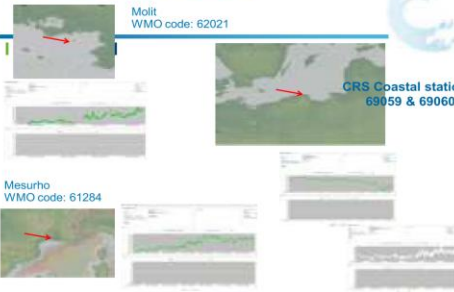
Presentation Outline

- General objective of WP7
- Some examples
- Status
- Data access and statistics
- What we learnt from Jerico

General Objectives and Means (from the DOW)

- This workpackage embodies the ultimate goal of the coastal observatories, ie the provision of useful data
- Taking into account what has been recommended within WP5 –Data Management coordination- remember R. Nair (OGS)'s presentation, the objective was to make the Jerico data flowing through the 2 main marine data circulation structures maintained at european level:
 - MyOcean and in the very near future Copernicus TAC-In situ (Near real time dedicated to operational oceanography needs
 - SeaDataNet delayed mode data structure based on the NODC –National Ocean Data Centres- network
- Practically speaking the data are first integrated in MyOcean then they are transmitted to SeaDataNet which acts as a portal for EMODNET

Data Availability: MOLIT and MESURHO




Molit
WMO code: 62021

Mesurho
WMO code: 61284

CRS Coastal station:
69059 & 69060

Nowegian FerryBox Network




Trollfjordj: LLVT

Alg@line
FINMAID
Call sign: OJMI

Color Fantasy: LMSD

Status of WP7: data availability



Station	WMO Code	Status
Molit	62021	Available
Mesurho	61284	Available
CRS Coastal stations	69059 & 69060	Available
Trollfjordj	LLVT	Available
Alg@line	FINMAID	Available
Color Fantasy	LMSD	Available



1. How to access the data ?

From the Jerico home page → data access



April 2015. Observing systems along the EU coasts 2011-2015 Contribution of Jerico

The objective of this slide is also to show that project data (here Jerico) contributes to a wider observing system and that it may be difficult to identify the number of specific downloading or the number of specific users for one project

Statistics are available only for the global system

2. How to get and visualize the data ?

Through the Coriolis web portal



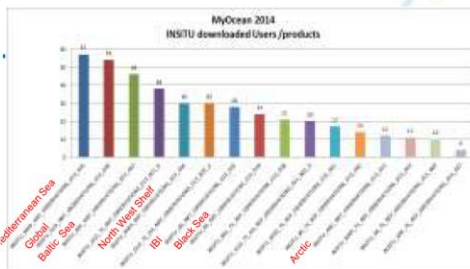
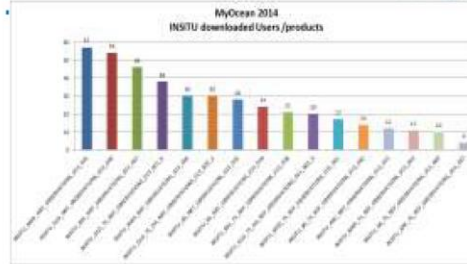
Example: 3 ferrybox vessels

3. How to get the data?

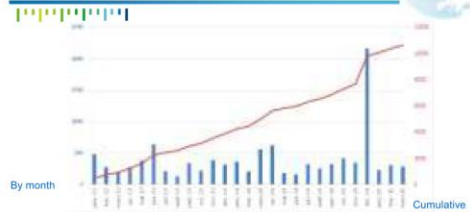
Through the MyOcean:

- register as a user of MyOcean
<http://www.myocean.eu/web/56-user-registration-form.php>
- get a personal user login and password
- connect to the MyOcean in situ distribution unit
ftp1.ifremer.fr/INSITU_GLO_NRT_OBSERVATIONS_013_030
- an index file dedicated to Jerico allows to sort out the Jerico data directory etc/project
- and links to the data directories montly and latest

Statistics
Number of users of MyOcean in situ products



Number of downloading of MyOcean data from the Global system 2013-2014-2015(3 months)



Courtesy of Mercator (A. Delamarche, C. Giordan, D. Obaton)



What we learnt from Jerico what could be enhanced in Jerico Next



• Data management process must be started from the beginning of the Project

• For each observing platform or system and data manager contact must be clearly identified not only the PI

• A stronger relationship must be set up between the « central » data management and the platform data responsible (local data manager)

• make simpler the tools to manage metadata (SensorML) to be used by non specialists. Doing so, data ingestion should be facilitated

• Provide more feed back from the central system to the data providers (avoid that the central data management system could be considered as a « blind » system)



VIII] WP1 Presentation (P. Morin, CNRS)



A Common Strategy

WP1 P. Morin, D. Durand, P. Farcy and I. Puillat

P. Morin | CNRS/INSU | pmorin@ab-roscoff.fr

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WP1: A common strategy

Why JERICO ?

- To address the challenge of **observing the complexity and high variability of coastal areas at Pan-european level**
 - New requirements arising from WFD and MSFD
 - Operational marine services (GMES)
- Often driven through short-term research projects, marine observing systems mostly answer local/regional monitoring. **Sustainability is not guaranteed**

One of the main challenges for the European research community is now to **increase the consistency and the sustainability** of these dispersed infrastructures by addressing their future within a **shared pan-European framework**.

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WP1: A common strategy

4 major actions

Objective: **Developing a common strategy for a pan European network of operational coastal observatories to address the challenge of observing the complexity and high variability of coastal areas**

4 major actions:

- 1 - Set up an European Research Infrastructure for coastal observations based on existing systems in European coastal and shelf seas.

(initial state of existing networks, gaps, running costs, policies WFD and MSFD, technological developments, governance)
- 2 - Creating a JERICO Label: To support standardization of operations and activities for the benefit of data quality and availability and cost efficiency.

(harmonization operation and maintenance methods, compability and interoperability to reduce costs, set of parameters, frequency, sampling scheme, data quality, best practices,...)

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WP1: A common strategy

4 major actions

Objective: **Developing a common strategy for a pan European network of operational coastal observatories to address the challenge of observing the complexity and high variability of coastal areas**

4 major actions:

- 3 - Organizing a Forum for Coastal Technology: To stimulate the development of new automated systems for the operational monitoring of the coastal marine environment, with the focus on the biochemical compartment.
- 4 - Promote access open access to JERICO network: to external users for their own experiments and testing (TNA) and access to data and services (SA)

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WP1: A Common Strategy

Tasks and % of completion

Partners involved

- Task 1.1: Set up the scene and implementation plan (M1-M24, INSU, all) 100%
- Rationale and definitions for a common strategy: define and give the orientations for the WPs and to prepare the roadmap for the future
- Task 1.2: Jerico Label (M1-M12, HCMR, PUERTO, HZG, CEFAS) 100%
- Defining a label for coastal observatories, with inputs from WP3 and WP4
- Task 1.3: Forum for Coastal Technology (M6-M48, M1, Ifremer) 100%
- 1st FCT at Ifremer Brest: Organisation of an intercalibration experiment of oxygen sensors.
- 2nd FCT at Oceanology International 2014 London : "Dissolved Oxygen Calibration: What are the best procedures?"
- Task 1.4: Definition strategy and interfaces with the monitoring of marine biodiversity (M12-M42, NIOZ, all) 100%
- Potential of existing coastal observatories to develop into observatories of biodiversity with interfaces with a biodiversity network.
- Delayed due to Carlo Heip death in autumn 2012.

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WP1: A Common Strategy

Tasks and % of completion

Partners involved

6 Tasks :

- Task 1.5: Roadmap for the future (M24-48, INSU, all) 99%
- Analysis and synthesis of the deliverables of all the WPs to elaborate recommendations for new implementations of coastal observatories (cost/benefit, levels of running costs, optimization of existing funding, proposing a pan European governance, ...).
- Task 1.6: User access for the Trans National Activities (M1-M26, CNR, all WP8 partners) 100%
- 3 calls for Trans National Access to existing infrastructures

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WP1: A Common Strategy

WP1 – List of Deliverables

Deliverable Number	Deliverable Title	Delivery date from DOW	Actual delivery date	Status	Lead Beneficiary
DI.1	First call for TMA proposals	8	8	Done	CNR
DI.2	Rationale and definitions for a common strategy	9	21	Done	INSU/CNRS
DI.3	Faxes of reference of the FCT	9	14	Done	MR
DI.4	JERICO Label definition	18	18	Done	HCMR
DI.5	Second call for TMA proposals	20	21	Done	CNR
DI.6	First report of the FCT activity	24	27	Done	MR

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WP1: A Common Strategy

WP1 – List of Deliverables

Deliverable Number	Deliverable Title	Delivery date from DOW	Actual delivery date	Status	Lead Beneficiary
DI.7	First report of the access activity	24	25	Done	CNR
DI.8	Second report of the FCT activity	36	40	Done	IFREMER
DI.9	Proposed strategy for biodiversity	36	38	Done	MAOZ
DI.10	Second report of the access activity	42	47	Done	CNR
DI.11	Final Report	48	48	Done	INSU/CNRS

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WP1: A Common Strategy

WP1 – List of Milestones

Milestone Number	Milestone Name	Delivery date	Comments	Status	Lead contractor
M51	First Steering committee outputs	9	First Steering committee report	Achieved	Ifremer
M56	Infrastructure available for users	11	Call	Achieved	CNR
M57	First Faxes for coastal technology	14	First faxing report	Achieved	MR
M58	Second Steering committee outputs	18	Second Steering committee report	Achieved	Ifremer
M59	Third Steering committee outputs	27	Third Steering committee report	Achieved	Ifremer

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WP1: A Common Strategy

WP1 – List of Milestones

Milestone Number	Milestone Name	Delivery date	Comments	Status	Lead contractor
M512	Fourth Steering committee outputs	36	Fourth Steering committee report	Achieved	Ifremer
M512	Five Steering committee outputs	45	Five Steering committee report	Achieved	Ifremer
M513	User report of activities	47	Final report	Achieved	CNR
M514	Roadmap for the future	48	Final report	Achieved	Ifremer CNRS/INSU

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WP1: A Common Strategy

WP1 – Main Difficulties

3 Main difficulties encountered:

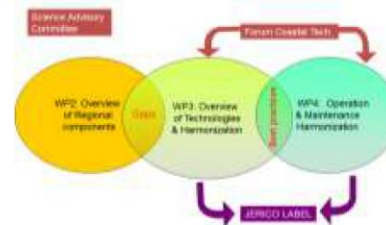
Deliverable Number	Deliverable Title	Delivery date from DOW	Actual delivery date	Status	Lead Beneficiary
DI.2	Rationale and definitions for a common strategy	9	21	Done	INSU/CNRS
DI.4	JERICO Label definition	18	38	Done	HCMR
DI.9	Proposed strategy for biodiversity	36	38	Done	MAOZ

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WP1: A Common Strategy

WP1 – Main Significant Results

Task 1.1: Set up the scene and implementation plan



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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.1: Set up the scene and implementation plan

NA Strategy Gaps, harmonisation, recommendations → JIRA Assessing new sensors and technologies → TNA Test of concepts through international cooperation based on experience

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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.2: Jerico Label
Defining a label for coastal observatories

Definition and objective of the JERICO Label:

- Set of criteria defined to ensure some standardisation and interoperability and the quality of data for coastal observatories;
- to establish a consensus on guidelines for best practices in the design, the implementation, the maintenance, the data policy and the valorisation of operational coastal observatories;
- to get, for the partners and all new comers that comply with this label, a fair recognition of the quality of the managed observatories;
- to help stakeholders becoming aware of the European interest in the development of high quality coastal observatories;
- to foster a wider market for the industry in sensor technology and platforms based on the agreed standards.

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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.2: Jerico Label
Defining a label for coastal observatories

First Step: Set of **three basic criteria** proposed

- Sustainability of the observatory/platform to set a minimum time frame
- Operationality to ensure that real-time and delayed mode data will be reliable, accessible and easy to distribute
- Observing purpose where observatories are classified in 2 major categories:
 - Primary or Core Parameters. These are basic parameters required for the specific observing purpose
 - Secondary Parameters. These are additional parameters which are 'good to have'

New Entry: New System - Sensor - Platform - Infrastructure
Standard Level: Compliance with the '16 key parameters' criteria
Full Level: Compliance with the '16 key parameters' criteria

Label awarded for 3 years from JERICO Scientific Committee and updated every 3 years

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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.3: Forum for Coastal Technology

Terms of reference of FCT:

- Provide a **strong interface between SMEs, industry, stakeholders and science & technology** by joint developments and technology transfer
- Seed an **Euro-ACT** in close collaboration with the US ACT organisation
- Analyse the market, forecasting scientific and societal needs for new coastal observatories
- Identify upcoming standards for quality assessment and for reducing equipment and maintenance costs
- Sustain joint research and development initiatives on sensors and platforms
- Provide an unbiased third party test bed for sensors and measuring systems

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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.3: Forum for Coastal Technology

1st FCT at Ifremer Brest: Organisation of an intercalibration experiment of oxygen sensors.

2nd FCT at Oceanology International 2014 London (13th March): "Dissolved Oxygen Calibration: What are the best procedures?"

Session 1: Presentations

- Scientific focus: 4 presentations (Ifremer, HZG, CHRS, Lab. Nat. Metrology et Essais (Ft))
- Manufacturer focus: 4 presentations (Andreas, Risko, Sea-Bird, NKE)

Session 2: Facilitated discussion

- Adapted calibration (coastal or open sea) and the essential calibration steps (good practices)
- Calibration market (low cost sensors, training, certification, QC)
- Main field vs lab issues

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WP1: A Common Strategy
WP1 – Main Significant Results

Task 1.4: Definition strategy and interfaces with the monitoring of marine biodiversity

Objectives:

- Carry out a study on the state and evolution of marine biodiversity in European coastal waters in regards of national and international legislation
- Investigate the potential of existing coastal observatories to develop into observatories of biodiversity
- To define interfaces with a future marine biodiversity network

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WP1: A Common Strategy

WP1 – Main Significant Results

Task 1.4: Definition strategy and interfaces with the monitoring of marine biodiversity

Three types of potential strategies identified for JERICO :

- Implement one or a few specific biodiversity related sensing techniques in existing and foreseen infrastructure of platforms to describe boundaries
Semi-automated imaging techniques and passive acoustics promising, genetic markers: potentials for the future
- Link to existing or developing pan-European initiatives of biodiversity observation and tune mutual activities (space and time resolutions) or finalize cooperation
EMBOS, ICES, interests from initiatives like GEO BON, EEA and DEVOTES
- Optimize biochemical sensors already present in the network to deliver explaining – or model parameters for biodiversity
Temperature, salinity, chlorophyll a, DO, pCO₂, nutrients

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WP1: A Common Strategy

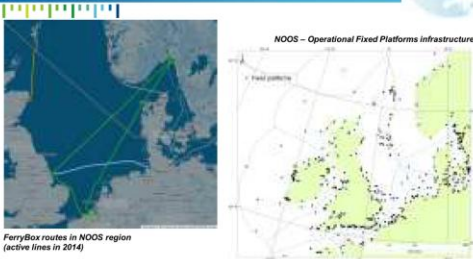
Main Significant Results

Task 1.5: Roadmap for the future

- 1 - Observing platforms: regional to pan-European integration
 - Identification of gaps and recommendations for developing observing systems by ROOS regions (IBROOS, NOOS, BOOS, MONGOOS, Black Sea, Arctic ROOS)
 - Identification of bottlenecks and priorities for the future
- 2 - Sensors integration, new developments and innovation (common and specific WP10 gaps, parameter measurements gaps, innovation process)
- 3 - Remaining gaps toward harmonisation
 - Calibration procedures
 - Operation and maintenance methods
 - Coastal data management at European level
- 4 - Strategy towards a better harmonised JERICO RI for the future
 - Harmonisation in conducting operations and maintenance
 - Harmonisation of calibration procedures
 - Future data management at European and International levels
 - Upgrade of the JERICO label in the future

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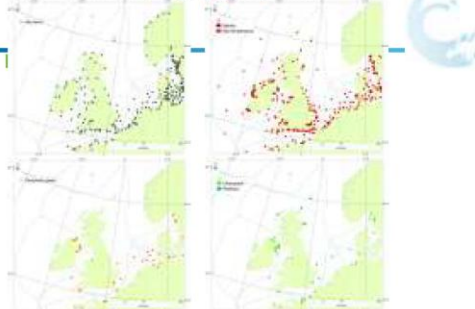
NOOS: FerryBox and Fixed Platforms maps



FerryBox routes in NOOS region (active lines in 2014)

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NOOS: Fixed Platforms – Maps by type of parameter



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State of the art in the networks and the sensors for the different types of platforms in the NOOS region:

	Well observed	Not sufficiently observed	Missing	Upcoming in the next 5 years (name of projects, persons involved)
Areas or networks	FerryBox lines	Gliders (only oceanographic campaigns)		
Sensors	Fixed Platforms FerryBox (T, S, Turb, Flu, CH)	FerryBox (O ₂ , pCO ₂ , Nutrients) Fixed Platforms (O ₂ , CH, Flu, Turb)	FerryBox (Biological parameters) Gliders (pCO ₂ , Nutrients, Biological parameters)	
Parameters	Gliders (T, S, O ₂ , CH, Flu, Turb) Fixed Platforms (Sea Level, T, S)		Fixed Platforms (pCO ₂ , Nutrients, Biological Parameters)	

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WP1: A Common Strategy

Main Significant Results

Task 1.5: Roadmap for the future

- Strategy for the future
- To expand the ferrybox network to provide data on a North-South transect in the North Sea (by restarting the previously operated line between 2005 and 2009 from Amsterdam to Bergen with M/S Trans Carrier)
 - To add the dissolved oxygen parameter to the existing ferrybox lines not yet equipped with this sensor
 - To harmonize the ferrybox set of sensors by adding recently validated parameters such as carbon system sensors (pCO₂, alkalinity) and in the future additional sensors under development such as nutrients and biological parameters (cyanobacteria, flow cytometer, ...)
 - To implement in the NOOS region repeated glider sections with a regular frequency to be determined.
 - To develop observations of biogeochemical and biological data which are only marginally provided and lacking in most of the fixed platforms.
*with mature sensors such as dissolved oxygen, fluorometers and turbidimeters.
in the future recently validated sensors such as carbon system sensors (pCO₂, alkalinity and pH) nutrients, contaminants and biological sensors (flow cytometer, new biological sensors developed in WP10).*

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WP1: A Common Strategy

Main Significant Results

Task 1.5: Roadmap for the future

- To complete the set of observing platforms with HF Radars such as the HF radar recently installed near the mouth of the Rhine river.
- To continue to collect ship-based water samples at some locations for validation and trend analysis
- To develop monitoring platforms giving access to vertical profiles of variables.

As for the other European regions the sustainability of the existing observational system is one of the main challenges facing the partners.

Coastal observing system sustainability should be pushed through a better collaboration framework between actors of core and downstream services, aiming to reach a general coherent system in which the levels of founding (Regional, National and European) are clarified and complementary.

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Common recommendations for all regions and priorities for the future:

- To extend the spatial coverage of ferrybox lines
- To add the dissolved oxygen parameter to the existing ferrybox lines not yet equipped with this sensor.
- To harmonize the ferrybox set of sensors by adding recently validated parameters such as carbon system sensors (pCO₂, alkalinity) and in the future additional sensors under development such as nutrients, contaminants (bio-sensors, passive sensors, ...) and biological parameters (cyanobacteria, flow cytometer, Fast-repetition rate fluorimetry, ...)
- To implement in all ROOS regions repeated glider sections with a regular frequency to be determined (monthly, seasonally, yearly)
- To develop observations of biogeochemical and biological data on fixed platforms

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WP1: A Common Strategy

Main Significant Results

Task 1.6: User access for the Trans National Activities

OBJ: Management of the Trans-National Access to installations of the JERICO network.

SubTask 1.6.1 (M1 - M26) :

- Preparation of the call – peer review
- Setting the "Selection Panel"
- Drafting the call
- Drafting the guidelines for evaluation
- Meetings of the Panel

SubTask 1.6.2 (M11 – M47):

- Information and reporting activities
- Drafting the specifications of the web site (call section), managing its construction and implementation.
- Managing the calls (call opening, proposals reception and transmission to the targeted providers for pre-screening technical review).
- Access reporting and information.

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WP1: A Common Strategy

Main Significant Results

Task 1.6: User access for the Trans National Activities

Three calls for access to coastal observatories launched

	1st Call 2012	2nd Call 2013	extra 3rd Call 2013	
Opening	12 January	14 January	19 September	
Deadline	3 April	27 March	25 November	
Evaluation	April – July	April – June	December – February	
Feedback to applicants	July	June	March	
Projects implementation	October onwards	October onwards	May onwards	
Submitted proposals	13	6	5	24
Approved proposals	10	5	5	20
Scheduled projects	9	5	5	19

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WP1: A Common Strategy

Main Achievements

- Rationale and definitions for a common strategy: launching a European strategic view on OCO, implementation by the WPs
- First Call for TNA proposals jan-mar 2012 (13 proposals received, 11 approved, 2 rejected)
- Terms of reference for the FCT: definition of the role and objectives of FCT (exchange of information between users and providers, ...)
- First FCT in Brest (october 2012), sensor intercomparison at Ifremer
- Second Call for TNA proposals jan-mar 2013 (6 proposals received, 5 approved, 1 rejected)

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- Third Call for TNA proposals sept-nov 2013 (5 proposals received, 5 approved)
- Second Forum for Coastal Technology (London, March 2014)
- JERICO Label Definition (March 2014)
- Definition strategy and interfaces with the monitoring of marine biodiversity (task 1.4, D1.9) April 2014.
- Roadmap for the future, April 2015

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WP1 P. Morin, D. Durand, P. Farcy and L. Puillat

Thank you

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IX] WP8 Presentation (S. Sparnocchia, CNR)



**TRANSNATIONAL ACCESS TO COASTAL OBSERVATORIES
WP8**

Stefania Sparnocchia | CNR | stefania.sparnocchia@ts.ismar.cnr.it

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Tables of content

- 1) **Tasks and % of completion**
- 2) **List of partners and infrastructures**
- 3) **Deliverables and milestones**
- 4) **Main difficulties**
- 5) **Minor difficulties**
- 6) **Main significant results**

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Tasks implemented in WP1 (T1.6: User modality Access for the Trans National Activities)

1.6.1 : Preparation of the call – peer review

- Drafting the call
- Drafting the guidelines for evaluation
- Setting up the Selection Panel
- Meeting the Selection Panel

1.6.2 : Information and reporting activities

- Implementing the TNA Web Pages
- Call and selection reporting:
- Calls opening, selected projects, access provision plans
- Access reporting including scientific and technological outcomes achieved

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Tasks and % of completion

Task	1st Call 2012	2nd Call 2013	% of completion	3rd Call 2013 (extra)
1. Call launch	12 January	14 January	100%	19 September
2. Call closure	3 April	27 March	100%	25 November
3. Evaluation	April – July	April – June	100%	December – February
4. Feedback to applicants	July	June	100%	March
5. Projects implementation	October onwards	October onwards	100%	May onwards

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List of partners and infrastructures

Partner	Country	Infrastructure(s)	Infrastructure type
NIVA	Norway	Color Fantasy	FerryBox
OGS	Italy	OGS-CTO	CalLab
CNR	Italy	ACQUA ALTA, MPLS, MPLC, MPL Genova	FixPlatf
HCMR	Greece	POSEIDON BUOYS POSEIDON CAL	FixPlatf CalLab
NERC	United Kingdom	COBS 4 POL/MARS	Glider
HZG	Germany	COSYNA_1 (FB) COSYNA_2 (PILE)	FerryBox FixPlatf
CSIC	Spain	CSIC-Glider	Glider
INSU	France	CETSM	Glider

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Deliverables and milestones

M8	D1.1 First Call for TNA proposals Delivered in January 2012 (M9), updated with an Addendum in May 2013 (application form, description of facilities)
M11	MS6 Infrastructure available for users
M20	D1.5 Second Call for TNA proposals Delivered in January 2013 (M21)
M24	D1.7 First report of the access activity Delivered in May 2013 (M25)
M42	D1.10 Second report of the access activity Delivered in March 2015 (M47)
M48	D8.1 Trans National Access Provision Delivered in March 2015 (M47)

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Main difficulties

Many actors, difficult communications, a new experience to build together

Typical issues:

- Misunderstanding of TNA rules
- Undervaluation of own responsibilities
- Slow replies to contractual requests



requiring extra-effort of the TNA Office.

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Minor difficulties

Some technical and logistical issues encountered

- Instrumentation failure
- Battery failure
- Re-scheduling due to bad weather
- Re-scheduling due to temporary infrastructure unavailability

All issues were resolved by cooperation between users and facility operators.

Only one user project couldn't be re-scheduled after equipment failure because of the end of JERICO.

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Main significant results

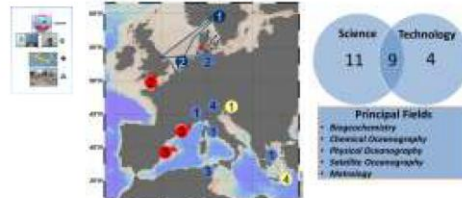
	1st Call 2012	2nd Call 2013	extra 3rd Call 2013	TOTAL
Submitted projects	13	6	5	24
Supported projects	9	5	5	19

- All the projects submitted their reports
- 2 peer reviewed papers
- 10 presentations in conference proceedings
- All the projects are presenting results at the JERICO Science Day

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Main significant results

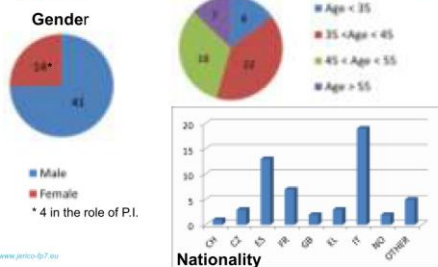
Demand vs. facility, distribution per sectors and principal fields of study



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Main significant results

User statistics



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Main significant results

Access provision

- The JERICO infrastructures delivered **2670 calendar days** of access
- The estimated funding to facility providers is **452525.48 €** (ref. Amended DoW : 446837.66 €)
- JERICO supported the user groups with an estimated budget of **80000-85000 €**

Budget amounts will be definitely calculated with the final financial report. Real unit costs should be provided.

(Ref. : Reporting transational access and service activity costs, Version May 2011)

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JERICO TNA links

The work done in WP8 is published on the project website:
<http://www.jerico-fp7.eu/tna>

In particular : developed procedures and rules, description of facilities, Call text, evaluation results, approved projects and their scores.

Results of User Projects are collected in
<http://www.jerico-fp7.eu/tna/tna-outcomes>

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Conclusions

JERICO established concepts and procedures for the transnational access to coastal observatories.

JERICO TNA activities have

- Established new scientific collaborations between users and access providers,
- Served the community in promoting innovation and the transfer of know-how.

The JERICO TNA program will be improved and consolidated in JERICO-NEXT (WP7):

- Wider offer of observing infrastructure (novel observing technologies and different monitored environments, including physical, chemical and biological components).
- 1.3 M€ Budget allocated to facility providers to support implementation of selected user projects.

Acknowledgments

JERICO TNA activity wouldn't have been successful without the contribution and support of

the **Selection Panel** (evaluation, review and selection)

Janet Newton (University of Washington, Executive Director of NANOOS)

George Zodiatis (University of Cyprus, Vice Director)

Richard Dewey (University of Victoria, Associate Director Science Ocean Networks Canada)

Hans Dalhin (SMHI, EuroGOOS Past Director)

Roger Proctor (University of Tasmania, Director IMOS)

Franciscus Colijn (HZG Professor Emeritus, MODEG chair)

Laurent Mortier (Ecole Nationale Supérieure de Techniques Avancées, Coordinator of FP7 GROOM)

Alicia Lavin (IEO-Centro Oceanográfico de Santander, Director)

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Acknowledgments

the **User Groups** (projects proposal and implementation)

AZTI-Tecnalia (ES), CENIM-CSIC (ES), CNR-IAMC (IT), CNR-ISSIA (IT), Ecole Nationale Supérieure des Sciences de la Mer e de l'aménagement du littoral (ALG), HCMR (EL), JRC (IT), Lancaster University (UK), Masaryk University (CZ), Mediterranean Institute of Oceanography (FR), National Institute of Marine Sciences and Technologies (TUN), NIVA (NL), Observatoire Océanographique de Villefranche/Mer (FR), SAROST SA (TUN), Stazione Zoologica A. Dohrn (IT), Systea S.p.a (IT), Universitat de Barcelona (ES), Universidad de Las Palmas de Gran Canaria (ES), Université de Neuchâtel (CH), Università Parthenope (IT)

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Acknowledgments

the **JERICO Consortium** for infrastructure availability and collaboration in promoting the TNA opportunity

Simon and Kathryn (Blue Lobster Ltd) for supporting the JERICO TNA webpage implementation

and last but not least,

the ladies that supported the JERICO TNA Office: **Sara, Nolwenn, Maëlle, Elodie and Ingrid.**

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X] WP9 Presentation (T. Vukicevic, CMCC)



Final General Assembly

WP9- NEW METHODS TO ASSESS THE IMPACT OF COASTAL OBSERVING SYSTEMS

Nadia Pinardi and Tomislava Vukicevic | CMCC Bologna and Lecce | Italy

www.jerico-07.eu

April 2015

OUTLINE

- Main WP9 Objectives and partnership
- WP9 Plan of work
- WP9 Results for all the shelf areas
- General conclusions

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Final General Assembly - JERICO-2

WP9 MAIN OBJECTIVES

WP9 should apply sophisticated data assimilative models and statistical methods to demonstrate the impact of coastal observations in analyses and forecasts

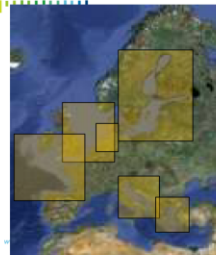
Two types of experiments are carried out:

1. Impact of existing observational platforms (OSE)
2. Impact of future observational platforms (OSSE)

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PARTNERS



- CMCC (IT)
- IFREMER (FR)
- CNRS (FR)
- DMI (DK)
- DELTARES (NL)
- HCMR (GR)
- HZG (DE)
- RBINS-OD (BE)

Final General Assembly - JERICO-4

WP9 IMPACTS

ANY SUSTAINABLE COASTAL MONITORING SYSTEM SHOULD SHOW ITS IMPACT ON THE QUALITY OF MODEL ANALYSES FOR FORECASTING AND RECONSTRUCTIONS (RE-ANALYSIS) — see major international groups like GODAE OCEANVIEW OSE-OSSE

OSSE OFFERS THE ONLY OBJECTIVE WAY TO ASSESS THE IMPACT OF NEW TECHNOLOGIES ON MODEL ANALYSES

OSE WILL HELP TO DEFINE THE MINIMUM OBSERVING SYSTEM REQUIREMENTS AND THE POSSIBLE GAPS OF SELECTED TECHNOLOGIES

INTEGRATION OF OBSERVATIONS AND MODELS GIVES THE STATE-OF-THE-ART DATA SETS FOR MSFD ASSESSMENTS

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WP9 REGIONS OF WORK

	ADRIATIC	AEGEAN	BAY OF BISCAY & ENGLISH CHANNEL	NORTH SEA	BALTIC
OSE	CMCC	HCMR	CNRS-IFREMER	DELTA RES HZG RBINS-OD	DMI
OSSE	CMCC		CNRS-IFREMER	HZG RBINS-OD	DMI

6



WP9 FOCUS OBSERVATIONS

	ADRIATIC	AEGEAN	BAY OF BISCAY & ENGLISH CHANNEL	NORTH SEA	BALTIC
OSE	FISHERY OBSERVING SYSTEM TEMP.	HF RADAR & FERRY BOX SST	RECOPESEA TEMP PROFILES	TIDE GAUGES & HF RADAR & T PROFILES FROM BUOY STATIONS	CTD T-S PROFILES AND SATELLITE SST
OSSE	FISHERY OBSERVING SYSTEM TEMP. & SAL.		FIXED STATION & GLIDERS & FERRY BOX	HF RADAR & T PROFILES FROM BUOY STATIONS	GLIDERS

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WP9 ASSIMILATIVE TOOLS AND DYNAMICAL MODELS

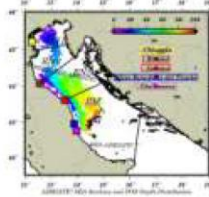
ADRIATIC	AEGEAN	BAY OF BISCAY	NORTH SEA	BALTIC
1/48 deg model & 3DVAR	1/48 deg model & SEEK Filter	1/50 deg model & Matrix representer	1 to 5 km models & Kalman filter, Observational sensitivity analysis	2 km model & 3DVAR

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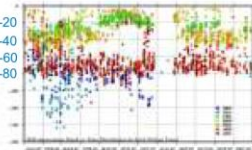
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ADRIATIC SEA: OSE FOR FISHERY OBSERVING SYSTEM DATA (CMCC)

7 fishing vessels from 5 ports



Depth and time distribution of data



Data from CNR, WP4

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ADRIATIC SEA: OSE FOR FISHERY OBSERVING SYSTEM DATA (CMCC)

EXPERIMENT 2007	TYPE	ASSIMILATION
CONTROL RUN	SIMULATION	NO
BEST ESTIMATE	ASSIMILATION	ALL FOS
OSE01	ASSIMILATION	SELECTIVE 4 VESSELS
OSE02	ASSIMILATION	W/O Ancona

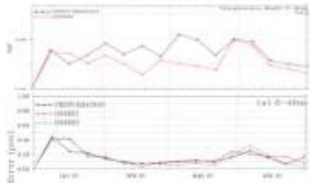


FOS: Mean RMSE (°C)	Control Run	Best Estimate	Error reduction %
0-40m	1.32	0.74	43.6
40-100m	0.53	0.34	35.9

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ADRIATIC SEA: OSSE FOR FISHERY OBSERVING SYSTEM DATA (CMCC)

EXPERIMENT	TYPE	ASSIMILATION
PERTURBATION	SIMULATION	NO
OSSE01	ASSIMILATION	ALL Synthetic FOS TEMP
OSSE02	ASSIMILATION	ALL Synthetic FOS TEMP+SALT



TEMPERATURE RMSE

SALINITY RMSE

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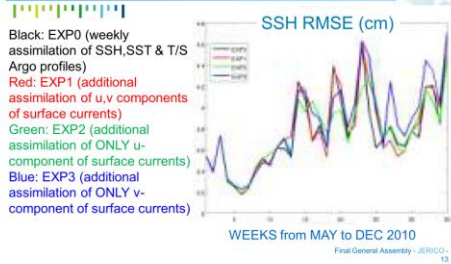
AEGEAN SEA: OSE FOR HF RADAR and FERRY BOX (HCMR)

HF RADAR

FERRYBOX

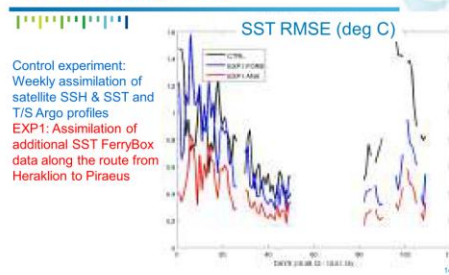


AEGEAN SEA: OSE FOR HF RADAR (HCMR)



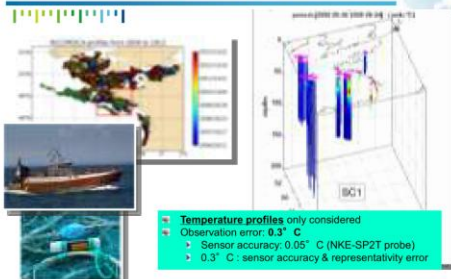
Black: EXP0 (weekly assimilation of SSH, SST & T/S Argo profiles)
 Red: EXP1 (additional assimilation of u,v components of surface currents)
 Green: EXP2 (additional assimilation of ONLY u-component of surface currents)
 Blue: EXP3 (additional assimilation of ONLY v-component of surface currents)

AEGEAN SEA: OSE FOR FERRY BOX SST data (HCMR)

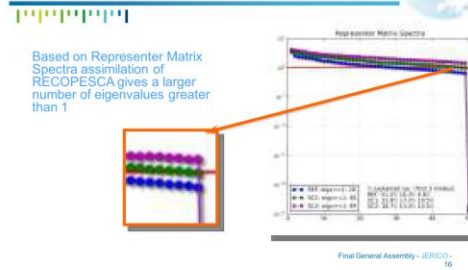


Control experiment: Weekly assimilation of satellite SSH & SST and T/S Argo profiles
 EXP1: Assimilation of additional SST FerryBox data along the route from Heraklion to Piraeus

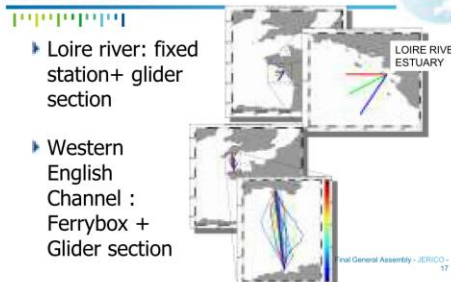
BAY OF BISCAY AND THE ENGLISH CHANNEL: OSE on RECOPECA PROFILES (IFREMER, CNRS)



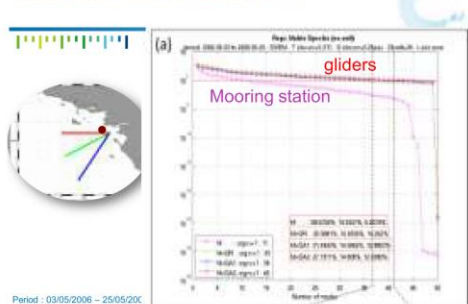
BAY OF BISCAY AND THE ENGLISH CHANNEL: OSE on RECOPECA PROFILES (IFREMER, CNRS)



BAY OF BISCAY AND THE ENGLISH CHANNEL: OSSE on Ferrybox, gliders and fixed stations (IFREMER, CNRS)

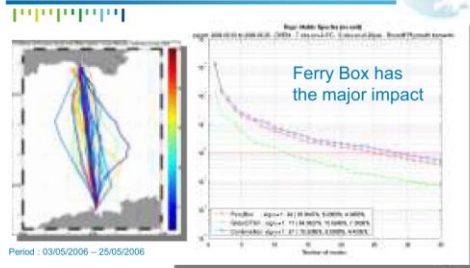


BAY OF BISCAY: larger number of modes greater than 1 means better network (IFREMER, CNRS)

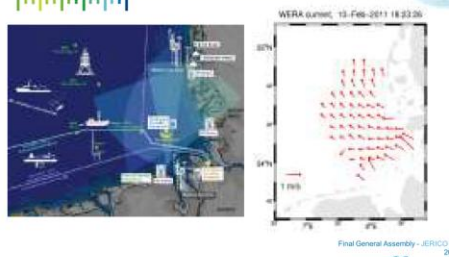




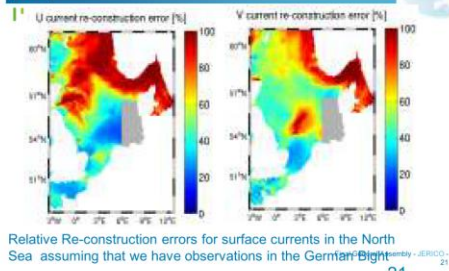
ENGLISH CHANNEL: larger number of modes greater than 1 means better network (IFREMER, CNRS)



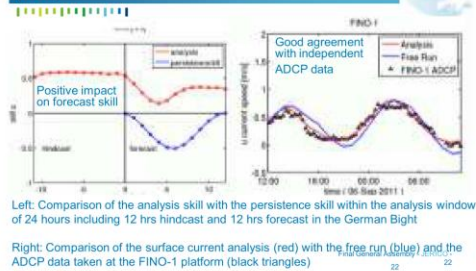
NORTH SEA-GERMAN BIGHT: OSE FOR HF RADAR (HZG)



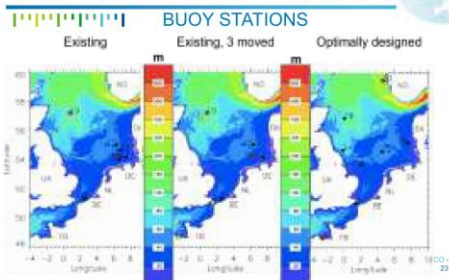
NORTH SEA-GERMAN BIGHT: OSE for HF RADAR (HZG)



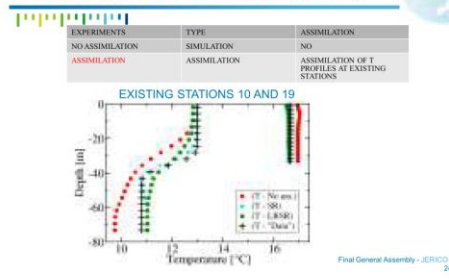
NORTH SEA-GERMAN BIGHT: OSE for HF RADAR (HZG)



NORTH SEA: OSSE/OSE FOR MOORED BUOY STATIONS PROFILES (RBINS-OD)

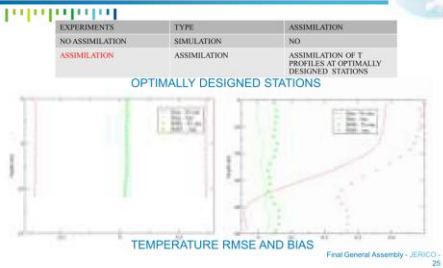


NORTH SEA: OSE FOR MOORED BUOY STATIONS PROFILES (RBINS-OD)

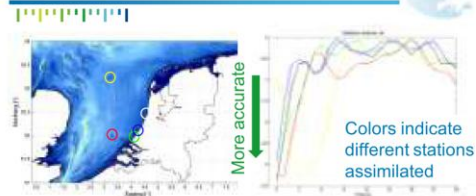




NORTH SEA: OSSE FOR MOORED BUOY STATIONS PROFILES (RBINS-OD)

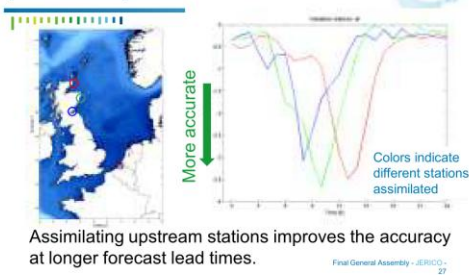


NORTH-SEA: OSE ON TIDE GAUGES (DELTAES)

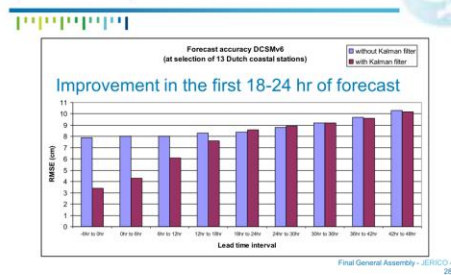


Assimilating nearby stations gives immediate impact on the forecast accuracy at Dutch stations

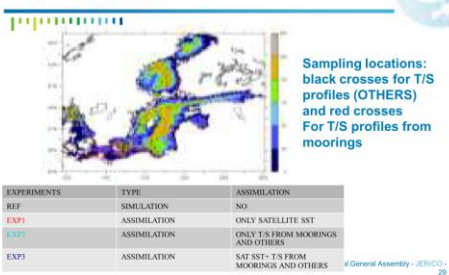
NORTH SEA: OSE ON TIDE GAUGES (DELTAES)



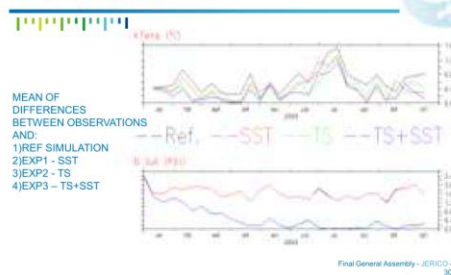
NORTH SEA: OSE ON TIDE GAUGES (DELTAES)



BALTIC SEA: OSE T/S CTD PROFILES AND SST (DMI)



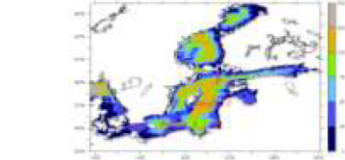
BALTIC SEA: OSE T/S CTD PROFILES AND SST (DMI)





BALTIC SEA: OSSE WITH GLIDERS (DMI)

OSSE FOR GLIDERS ON ROUTE 1 AND 2

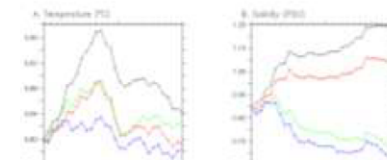


EXPERIMENTS	TYPE	ASSIMILATION
PERTURBATION RUN	SIMULATION	NO
EXP1	ASSIMILATION	ONLY ROUTE 1
EXP2	ASSIMILATION	ONLY ROUTE 2
EXP3	ASSIMILATION	ROUTE 1 & 2

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BALTIC SEA: OSSE WITH GLIDERS (DMI)

OSSE FOR GLIDERS ON ROUTE 1 AND 2



Pert. run – black
 Exp. 1 – red, route 1 glider
 Exp. 2 – green, route 2 glider,
 Exp. 3 – blue, route 1&2 glider

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GENERAL CONCLUSIONS

- ✓ The overall lessons learned are that all studied platforms can complement properly satellite monitoring and thus they are essential components of a future European coastal observing system
- ✓ OSE/OSSE provide a robust and feasible tool to show impacts of the observing system on end-user derived product quality (analyses and forecasts)

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GENERAL CONCLUSIONS

Major findings for each Observing platform used:

- 1) **Tide Gauges** have large impact on accuracy of 12 and 24 hours sea level forecasts, need networking of data among data providers
- 2) **Fishing Vessels measurements** are impacting positively better with vertical profiles than single depth point measurements. Horizontal sampling scheme could be streamlined
- 3) **FerryBox** is a crucial component of the observing system for SST introducing high frequency data to resolve the daily cycle
Fixed platform profiles have positive impacts provided that they are not overlapping and sufficiently homogeneous in positions
- 5) **Gliders** offer a positively impacting platform in the shelf areas of freshwater intefluence
- 6) **HF radars** are a formidable monitoring system for the coastal area provided more progress is done in terms of quality control of the measurements

Final General Assembly - JERICCO - 34



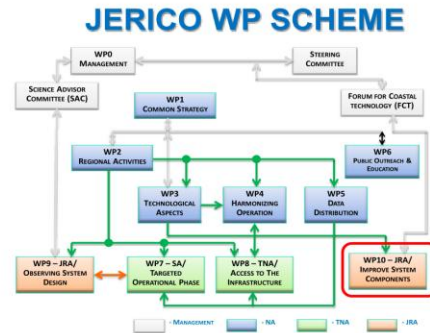
XI] WP10 Presentation (G. Nolan, MI)

JERICO WP10: JRA EMERGING TECHNOLOGIES (IMPROVE SYSTEM COMPONENTS)

Glenn Nolan and Paul Gaughan

Speaker | Organizer | address mail

www.jerico-tp7.eu April 28th to 30th 2015, Final meeting, Brest

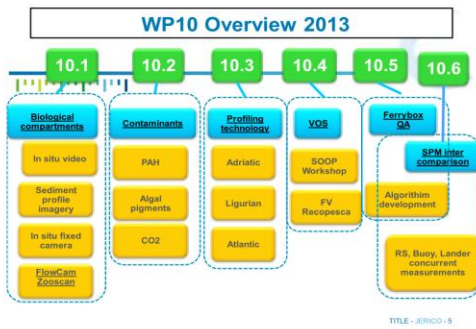


PARTNERS INVOLVED

Participant number	Participant short name	Person months
1	IFREMER	10
2	SYKE	10
3	NIVA	14.5
8	OGS	9
9	CNR	3
11	HCMR	10
12	NERC	24
14	HZG	14.5
15	MUMM	3
16	CEFAS	2.5
17	SMHI	4
18	CSIC	4
20	MI	10
23	INSU/CNRS	24

TITLE - JERICO - 3

- WP10 OBJECTIVES**
- To examine the extent to which existing technologies can be improved and/or adapted to the benefit of coastal operational oceanography and to document and test emerging technologies that will underpin future operational oceanographic systems in Europe's coastal seas. The work package is sub-divided into tasks including:
1. New tools and strategies for monitoring key biological compartments and processes
 2. Development of new physico-chemical sensors
 3. Use of emerging profiling technologies for coastal seas.
 4. Increased use of ships of opportunity in making coastal oceanographic measurements.
 5. Best practices in coastal observatory implementation
- TITLE - JERICO - 4



OVERALL TIMELINES FOR WP10

WP 10	year 1			year 2			year 3			year 4						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
T10.1 - Developments of new tools and strategies for the monitoring of key biological and processes																
T10.2 - Developments of physico-chemical sensors and implementation on new platforms																
T10.3 - Emerging technology - profiling technology, inter-comparison with mature technology, glider navigation and operation																
T10.4 - Ships of opportunity, next generation fishing vessel probes																
T10.5 - Ferrybox QA Algorithm																
T10.6 - Sediment measurements in shallow coastal waters																

TITLE - JERICO - 6



DELIVERABLES: WP10

Deliverable Number	Deliverable title	Lead Beneficiary	Estimated indicative person months	Nature	Dissemination level	Delivery date
D10.1	Report on trials and deployment	20	20	R	PU	36
D10.2	Set of software	23	60	R	PU	42
D10.3	Report on data analysis	14	32.5	R	PU	42
D10.4	Report on potential new sensors	1	30	D	PU	42
Total			142.5			

TITLE - JERICO-7



WP 10.1 Report on Trials and Deployments - Layout

The various field trials are presented in this report with a focus on different observation platforms and different parameters which will be measured by the various sensors.

Each field trial was assessed using the following headings

- Rationale
- Focus on new trials and experiments
- Instrument set up
- Platform used
- Methodology
- Assessment of the success/failure of trial

TITLE - JERICO-8

D10.1 Trials and deployments

Table of Contents (abridged)

1. DOCUMENT DESCRIPTION
- 1.1 REFERENCES
2. EXECUTIVE SUMMARY
3. TRIALS AND DEPLOYMENTS
 - 3.1 Software Testing and deployment for Monitoring of key biological compartments - WP10 Task 10.1
 - 3.2 Phycoerythrin fluorometry in autonomous monitoring systems -
 - 3.3 Fast-repetition rate fluorometry in autonomous monitoring systems -
 - 3.4 Carbon Development of new physico-chemical sensors
 - 3.5 Emerging technology: profiling technology, inter-comparison with mature technology, Use of emerging Profiling technologies in coastal seas.
 - 3.6 Ships of opportunity/Next Generation fishing vessel probes - WP10 Task 10.4
 - 3.7 Ferrybox QA algorithm - WP10 Task 10.5
 - 3.8 Remote sensing of suspended particulate matter concentration, inter-comparison with smart buoy and benthic lander (RBINS-QD Nature) - WP10 Task 10.6
4. CONCLUSIONS
5. REFERENCES

TITLE - JERICO-9

WP 10.1 Report on Trials and Deployments Summary

- Software Testing and deployment for Monitoring of key biological compartments 10.1 This trial was carried out by EPOC CNRS.
- Phycoerythrin fluorometry in autonomous monitoring systems - WP10 Task 10.2 Development of new physico-chemical sensors
- Fast-repetition rate fluorometry in autonomous monitoring systems - WP10 Task 10.2 Development of new physico-chemical sensors
This trial was carried out by the Finnish Environment Institute SYKE, Marine Research Centre
- WP10 Task 10.2.3 Carbon Development of new physico-chemical sensors
This trial was carried out by NERC.
- Emerging technology: profiling technology, inter-comparison with mature technology WP10 Task 10.3 Use of emerging Profiling technologies in coastal seas. This trial was carried out by OGS
- Ships of opportunity/Next Generation fishing vessel probes - WP10 Task 10.4
This Trial was carried out by IFREMER
- Ferrybox QA algorithm 10.5 - work carried out by HZG
- Remote sensing of suspended particulate matter concentration, inter-comparison with smart buoy and benthic lander 10.6
Trial carried out by RBINS

TITLE - JERICO-11

WP 10.2 Development of set of software for image analysis

- The Deliverable analyses the functionality and performance of these software systems under the following headings.
- Description of the rationale for the software development
- High level description of software and its functionality
- Information on Manuals and set-up of software
- How to get Delivery/download of software
- Conclusions
 - SPI
 - Video Imaging - Mobile and Fixed Platforms
 - Zooplankton /Phytoplankton

TITLE - JERICO-12



D10.2 Software development

Table of Contents

1. DOCUMENT DESCRIPTION
- 1.1. REFERENCES
2. EXECUTIVE SUMMARY
3. RATIONALE
 - 3.1 Sediment Profile Images (SPI)
 - 3.2. Video Imaging Software - AviExplore
 - 3.3. Images derived from laboratory experiments designed to process and assess phytoplankton
4. HIGH LEVEL DESCRIPTION
 - 4.1. SpiArcBase Description
 - 4.2. AviExplore Description
 - 4.3. ZooScan Description
5. ACCESS TO DOWNLOAD THE SOFTWARE AND USER MANUALS
 - 5.1. SpiArcBase
 - 5.2. AviExplore
 - 5.3. ZooScan
6. CONCLUSIONS
 - 6.1. Sediment Profile Images
 - 6.2. Video Imaging
 - 6.3. Phyto and Zoo plankton
7. REFERENCES

WP 10.2 Development of set of software for image analysis

The 10.2 'Set of Software' deliverable is primarily linked to Task 10.1 from the Jerico Description of Work - Development of new tools and strategies for the monitoring of key biological compartments and processes. The idea behind this deliverable is to harness existing imaging and biology expertise within different fields to develop and test new software designed to process the following data:

- **Sediment Profile Images.**
 - SpiArcBase provides an excellent tool for the analysis of Sediment Profile Images (SPI).
- **Mobile platform recorded video.**
 - AviExplore allows the treatment of video imaging of the water sediment interface acquired using a ROV (or other mobile carriers) in order to infer the abundance of epibenthos (suprabenthos).
- **Fixed platform recorded video.**
 - AviExplore is also used to analyse video imaging by fixed cameras. The main purpose is to allow the survey of recruitment on substrates, as well as the growth characteristics of fouling organisms. Image analysis is used to track the animals settling on the substrate, measure their interactions and growth rates.
 - It is to be noted that for the convenience of final users, **a single software (AviExplore) is proposed for video data originating from fixed and mobile platforms** giving access to the different modules depending on the desired analysis.
- **Phytoplankton and Zooplankton images.** ZooProcess - an integrated analysis system for acquisition and classification of digital zooplankton images from preserved zooplankton and 14 phytoplankton samples.

WP 10.3 Report on Data Analysis (Moored Profile comparisons, 3D T/S structure)

The Deliverable 10.3 data analysis experiments presented are assessed under the following headings:

- Data collection methodology
- Quality assurance applied
- Analysis
- Scientific results
- Published papers (included as annex)

The real time quality control of operational observation data of a number of Jerico partners has also been addressed with the focus on FerryBox systems. Real time quality controls (RTQC) procedures have been formulated and presented. For all kinds of platform there are general tests applicable. The topics described are presented as according to the Description of Work (DoW)

- Review of data processing undertaken by JERICCO partners
- manual intervention in data processing protocols
- development of (Matlab code) algorithms for data processing

D10.3 Data report

Table of Contents

1. DOCUMENT DESCRIPTION
- 1.1. REFERENCES
2. EXECUTIVE SUMMARY
3. DATA ANALYSIS REPORT ON DISSOLVED OXYGEN SENSORS AND INTER-COMPARISON EXERCISES
4. DATA ANALYSIS ON THE STAR-ODDI AND NKE PROBES
5. DATA ANALYSIS REPORT ON NATIONAL OCEANOGRAPHIC CENTER FERRYBOX DATA
6. REAL TIME QUALITY CONTROL (RTQC) OVERVIEW
7. PROFILING TECHNOLOGY INTER-COMPARISON WITH MATURE BUOY TECHNOLOGY
8. REFERENCES
9. APPENDIX
 - 9.1. Depth and temperature offset of the Star-Oddi sensors
 - 9.2. Median value of depth, temperature and salinity offset of the NKE sensors
 - 9.3. Quality control algorithms for manual expert judgement - examples
 - 9.3.1. Visual data editor with Matlab™ code from NOCS
 - 9.3.2. Visual data editor in HZG data base

WP 10.3 Report on Data Analysis (Moored Profile comparisons, 3D T/S structure)

This report focuses on Data analysis and processing techniques undertaken by JERICCO partners, it also includes details on the data analysis of a number of inter-comparisons between various sensing technologies including:

- Data analysis Report on Dissolved Oxygen sensors inter-comparison exercises - Ifremer
- A Data analysis and evaluation on Star-Oddi and NKE probes in order to assess their capability to be used for physical oceanography purposes - CNR-ISMAR
- Data analysis, methodological development and 3D T/S (Temperature/Salinity) structure along FerryBox lines carried out under the JERICCO project. - NOC
- A report on a moored profile analysis trial to assess the data availability using different methods in varying weather and operating conditions and to compare profile measurements from a moored buoy with similar profiles from profiling floats, standard ship based CTD measurements and surface data from FerryBox systems.

WP 10.4 - Report on Potential New Sensors (Fishing Vessels and Voluntary Opportunity Ships)

The report on the new sensors and other emerging technologies is structured and presented as follows:

- Description of new sensors and emerging technology
- Appropriate platform for the sensor (Ferrybox, Glider, Fixed platform, other)
- Future steps
 - Integration into operational system
 - Timescale of integration
 - Cost implications
 - Other operational considerations.



Table of Contents

1. DOCUMENT DESCRIPTION D10.4 New technologies

2. EXECUTIVE SUMMARY

3. DESCRIPTION OF NEW SENSORS AND EMERGING TECHNOLOGY

3.1. Potential new Sensors Developed at NOC

3.1.1 Generic sensor technology elements

3.1.2. Wet chemical Lab on chip nutrient sensors: Nitrate, nitrite, phosphate, ammonia and silicate

3.1.3. Wet chemical Lab on chip trace metal sensors: Fe/Mn

3.1.4. Wet chemical Lab on carbonate system sensors: pH, Total Alkalinity (TA) and DIC

3.1.5. Optodes: pH and pCO₂

3.1.6. Lab on chip micro flow cytometer **TRLs defined here**

3.1.7. Lab on chip Nucleic acid analysis

3.1.8. Miniature / low cost CT (salinity) and dissolved oxygen sensor

3.2. Potential new Sensors developed at Syke – Finnish Environment Institute

LED fluorometers for phycochlorins and CDOM, Spectral fluorometers for phytoplankton taxonomy

Variable fluorescence measurements, Fast-repetition rate fluorometry (autonomous systems)

4. APPROPRIATE PLATFORM FOR THE SENSOR (FERRYBOX, GLIDER, FIXED PLATFORM, OTHER)

4.1. Introduction

4.2. Ships of opportunity

4.3. Fishing Vessels – Next Generation fishing vessel probes

4.4. Description of Technology Autonomous profiler platform in coastal water (EOL3)

4.5. Description of Technology - Emerging Imaging Technologies

5. CONCLUSIONS

WP 10.4 - Report on Potential New Sensors (Fishing Vessels and Voluntary Opportunity Ships)

This report focuses on the documentation and testing of emerging sensor technologies looking at the improvements and development of emerging new technologies and sensors, along with the use and development of platforms allowing for the optimal deployment of novel sensors. These include emerging profiling technology, gliders and ships of opportunity.

One of the key objectives is to examine the extent to which emerging technologies can be utilised and/or adapted to the benefit of coastal operational oceanography and to document and test technology will underpin future operational oceanographic systems in Europe's coastal seas.

This report includes a description of Potential new sensors developed in relation to Tasks 10.3/10.4 – (Emerging Technology) and links the development of these potential new sensors for deployment on ships of opportunity (Volunteer Opportunity Ships – VOS) – including fishing vessels.

TITLE - JERICO - 20

WP 10.4 - Report on Potential New Sensors (Fishing Vessels and Voluntary Opportunity Ships) - Conclusions

This report documents the improvements and the development of new tools and sensors used by Jerico partners allowing for:

- (1) The measurements of a new set of parameters (including biological ones)
 - (2) A better precision of already available measurements (e.g., in relation with the monitoring of rising threats such as ocean acidification)
 - (3) The automation of parameter's acquisition, which will allow for operating at higher frequency and on wider geographical scales. This last point is also important in view of reducing the time lag between raw data measurements and the delivery of relevant and products (i.e., in developing operational observatories).
- A key issue covered in this deliverable involved analysis of the use and the development of platforms allowing for the optimal deployment of sensors. This includes emerging profiling technology gliders and ships of opportunity.
- It is clear from analysis of the future steps that in many cases there is a requirement that the technology be improved and/or further adapted before it will be of wide ranging benefit to underpin future operational oceanographic systems in Europe's coastal seas.

TITLE - JERICO - 21



Recopesca Trials Ireland

Recopesca Units installed on MV Saturnas and MV Willie Joe in February 2015

Trial vessels are scallop trawlers - operating in Irish /Celtic Sea

Issues with power supplies and communications – no data collected so far

Plan to continue trial throughout the summer





Recopesca Trial Preparation



TITLE - JERICO - 25

DIFFICULTIES ENCOUNTERED

Some technical challenges:
Adriatic Sea deployments
Ferrybox: Open Atlantic trial (task leader retired)
Celtic Sea FOOS: "Transitional activity"

Some "light" contributions to final deliverables : still scope to improve 10.3 in particular.

TITLE - JERICO - 26

Thanks to all WP10 Partners!



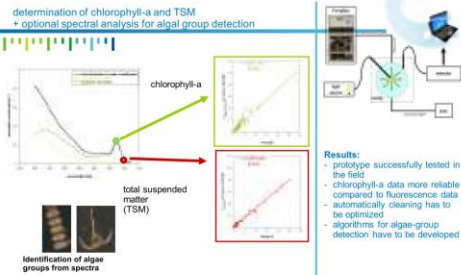
PROTOTYPE TESTING - «CHEMICAL EXTRACTOR» CHEM. MARINER PROJECT – TEST OSLO-KIEL



Polyethylene membranes and triolin
Membranes brought to laboratory for analysing of PAH, PCB and some pesticide.

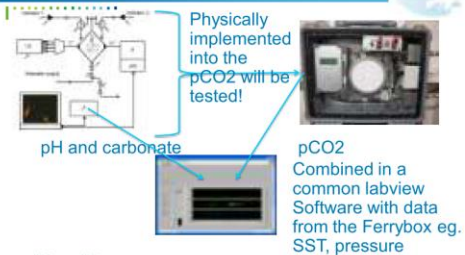
TITLE - JERICO - 28

Flow-Through Point Source Integrating Cavity Absorption Meter (ft-PSICAM)



TITLE - JERICO - 29

COMBINED APPROACH PH AND PCO2 INTO THE FERRYBOX



Kai Sørensen, NIVA
 Kai.sorensen@niva.no

TITLE - JERICO - 30



INSERT TEXT

LEO1 2004/2008 FOS 0 7600 FOS 2 7000

The new EOL buoy version 3 has been deployed in March 29th 2013 in the Villefranche bay. The new version is larger and bigger than the previous one: 4 tons & 8m height & 3.6 diameter. The CTD profiler has been re-integrated in the buoy which provide one T&S profile every day (0-100m). Additionally a cytometer has been also integrated for picoplankton & bacteria analysis.

TITLE - JERICO - 31

THE OGS PROFILING DATA BUOY

TITLE - JERICO - 32

NEW OBSERVING SYSTEMS FOR SHIPS OF OPPORTUNITY

Ifremer – June 2012 – Workshop on Autonomous Surface vehicles

TITLE - JERICO - 33

SSD-Pesca Project

Future Upgrade of the FOS to FOOS: Fishery & Oceanography Observing System

The e-logbook allows the control center to download the collected data and send back other info to the fisherman daily via GPRS or satellite.

1 Bottom trawler already implemented. More vessels by the end of 2013.

Collected data: GPS, water temperature, salinity, pressure, meteorology, catch amount, species caught and target species size.

TITLE - JERICO - 34

TASK 10.5 FERRYBOX QA

FERRYBOX NEAR-REAL-TIME DATA QUALITY CONTROL** AT HZG

Real-Time Mode

- All parameters filtered/flagged by housekeeping parameters:
 - status of the FB
 - location
 - speed of the vessel
- Single parameters flagged by:
 - range-check (reasonable regional and seasonal limits)
 - proper values
 - balance (noise)
 - balance

Post Processing

- Transfer to HZG and import into the FerryBox database
- Stored information in the Database per data year:
 - date-time
 - longitude/latitude
 - physical value
 - quality flag
 - equipment
 - operator
 - location
 - status

Web based visual control tool of FerryBox logs

MyOcean ftp site (NIVA)

** Real time data quality control (RTQC) according to the recommendations of EuroGOOS DATA-MEO working group (http://www.eurogoos.org/documents/eurogoos/downloads/eq10_19_rt_qcprocedures.pdf)

TITLE - JERICO - 36

LOCATION

SPM conc (mg/l)

51.5

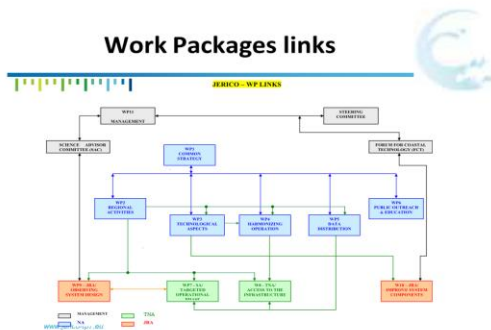
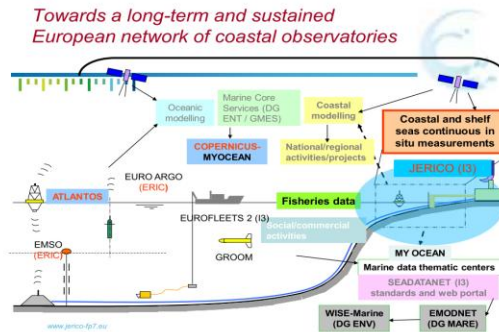
3 3.5

at a water depth of 1-2 m, near MOW1 at a distance of 6 km from Zeebrugge harbor data will be logged internally over periods of several months (depending on sampling frequency)

TITLE - JERICO - 36



XII] WP11 Presentation (P. Farcy, IFREMER)



- MAIN MEETINGS**
- May 2014: 2nd general assembly – Oslo (N)
 - June 2014: 2nd summer school – Delft (NL) (& JERICO-NEXT preparation meeting)
 - September 2014: Ferrybox meeting – Tallinn (EE)
 - October 2014: Workshop WP 3, 4, 9 – EUROGOOS conference - Lisbon (P)
 - December 2014: Steering committee n°5 – Brussels
 - April 2015: Final Assembly week – BREST (F)
- www.jerico-gp7.eu



JERICCO WEBSITE

• www.jerico-fp7.eu

- A practical link with the partners:
- General information: next events (FCT), project news
- Access to deliverable
- Information on TNA and Data
- Data tool provided by WP6
- OCEANBOARD
- OCEANBOARD : a well adapt tool to touch the professional or non professional public.
- JERICOPROF and JERICOPUB

www.jerico-fp7.eu

DELIVERABLES/ MILESTONES

28 DELIVERABLES FINALISED AND UPLOADED IN THE RP3
→ More than 2/month

58 DELIVERABLES FOR ALL THE PROJECTS
→ 1,2/month

All the milestones are achieved except one in WP10 :

MS25 : Data report on salinity and Temperature measurements from XBT and FerryBox

JERICCO Final GA | Brest | France

TECHNICAL REPORTING

- 1) **RP3 TECHNICAL REPORTING IS QUITE FINISHED EXCEPT FOR WP9 AND WP10**
- 2) **FINAL REPORTING IS TO PROVIDE BY THE WP LEADERS END OF MAY 2015:**

A Final report must be submitted to the EC within 60 days of the end of the project, in addition to the Periodic report covering the last reporting period. EC Template final report	by coordinator
Front page	
1. Final publishable summary	by coordinator + WP leaders
2. Use and dissemination of foreground Incl. lists of publications, patents, exploitable results	by coordinator + WP leaders
3. Report on social implication Incl. ethical, work force and gender aspects	by coordinator + WP leaders

JERICCO Final GA | Brest | France

FINANCIAL REPORTING

- 1) **RP3 FINANCIAL REPORTING CONSISTS ON (as RP1 and RP2)**

PROVIDING AN EXCEL TABLE WITH ALL THE INFORMATION PER ITEMS (PERSONAL COSTS, T&S, OTHER DIRECT COSTS, ACCESS COSTS) TO THE COORDINATOR BEFORE END OF MAY

- 2) **AFTER ACKNOWLEDGE BY THE COORDINATOR:**

- **SUBMISSION OF THE RP3 FORMC AND THE ADJUSTMENT FORMC FOR RP2**

- **FOR ACCESS COSTS, YOU NEED TO JUSTIFY THE REAL COSTS**

- **ALL THE DETAILS ARE TO BE DESCRIBED IN THE ATTACHED FILE TO FORMC ON THE COMMISSION PARTICIPANT PORTAL**

JERICCO Final GA | Brest | France

A great thank to all Jerico participants, selection panel experts, partners and TNA user teams.



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Thanks to Samsung for this great announcement



www.jerico-fp7.eu

