Joint European Research Infrastructure network for Coastal Observatories

Second Call for TNA proposals D1.5

Grant Agreement n° 262584
Project Acronym: JERICO

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

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Involved Institution: CNR
Date: 16-01-2013

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1. Document description

REFERENCES

Annex 1 to the Contract Description of Work (DoW) version of the 22 Feb. 2011

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2. Executive Summary

The primary objective of the JERICO Transnational Access (TNA) activity is to enable scientists and engineers to freely access coastal infrastructures not available in their own countries. The JERICO Consortium includes research facilities such as ferryboxes, fixed platforms, gliders, and associated calibration laboratories.

Access to these facilities will contribute to

- building a long-term collaboration between users and JERICO partners, facilitating staff exchange and scientific cooperation;
- building an European facility for science dedicated to innovation (new sensors, new automated platforms), open to Europe and also to countries of common regional interest (South Mediterranean, Black Sea, Baltic Sea);
- promoting the infrastructure by transferring know-how from the partners to users, with a view to future expansion that will include new partners (possibly also from non-European countries).

JERICO has planned to organize at least two calls for proposals requesting Transnational Access to targeted facilities within its network. Visiting scientists and technical personnel working on approved projects will be provided assisted access to relevant facilities.

The first call for access to the JERICO Coastal Observatories and Calibration Facilities was launched on 12 January 2012 and closed on 3 April 2012. Nine of thirteen submitted proposals were approved and their implementation is on-going.

The second call will open from 14 January 2013 to 18 March 2013 with activities scheduled to start in the early summer of 2013 subsequent to a formal screening and selection process.

The launch of a further call is planned before the end of 2013.

3. Second Call

The second call for access to the JERICO Coastal Observatories and Calibration Facilities will open from 14 January 2013 to 18 March 2013 with activities scheduled to start in the early summer of 2013 subsequent to a formal screening and selection process.

The JERICO project is offering access to different ferrybox lines in the Baltic Sea, the Greater North Sea and the Atlantic Ocean, various networks of fixed platforms and other single fixed point installations (buoys, towers, shore stations and underwater installations), and glider fleets based in the Greater North Sea and the Mediterranean Sea. Calibration laboratories are also being put up for access.

This is a unique opportunity for scientists and engineers to avail of high-quality, interlinked instrumented infrastructures operating in coastal and shelf-sea areas for carrying out research and/or testing activities.

Interested users can request access to one or more facilities. JERICO will provide them with technical assistance, travel support and often many core measurements that may be necessary to their work. Visitors and projects will be selected on the basis of the quality and novelty of the proposed activities.

Detailed information on the facilities offered for access, the eligibility of users, rules and selection procedures can be found on the JERICO website using the following links

Available facilities: http://www.jerico-fp7.eu/tna/calls-and-selection/second-call/access-facilities

Eligibility and access rules: http://www.jerico-fp7.eu/tna/access-rules

Selection procedure: http://www.jerico-fp7.eu/tna/calls-and-selection

Preparing the proposals, the users are asked to verify the particulars of access to the facility they wish to utilize by contacting the relevant operator (contacts at the Available facilities page).

It is mandatory that user groups interact directly with the manager of the facility/ies they wish to use during the preparation of proposals**.** This will permit a better understanding of the feasibilities of the proposed projects by the very parties who will be working together if they are approved, while also fostering closer cooperation between them in addressing practical concerns.

Proposals have to be drawn up following a template distribute through the JERICO TNA webpage together with guidelines (see Annexes 1 and 2) and sent by email within 18 March 2013, 23:59 (CET) at the following email address: JERICO.TNA@ismar.cnr.it.

4. Access rules

The JERICO Consortium offers Transnational Access (TNA) to a number of unique European Coastal Observatories and Calibration Facilities for international research and technology development.

Free-of-charge access to the facilities specified in the TNA context will be granted following the evaluation of proposals submitted by *user groups* for their utilization in response to dedicated Calls during the lifetime of the JERICO project. A *user group* can be a single researcher (user) or a team of two or more researchers (users). The evaluation of submitted TNA proposals will be conducted via a selection process that will assess them for scientific excellence, innovation and eventual impacts on the state-of- the-art.

The access conceded will include logistical, technical and scientific support by the *access provider* (or *infrastructure/facility operator*), and any special training that a user group may require to use an assigned infrastructure.

JERICO will contribute to the travel and subsistence costs relating to visits by users, whenever necessary. A maximum of two travel grants will be assigned to each *user group*, depending on the length of the requested period of stay.

4.1 Eligibility of *user groups*

To be eligible to benefit from access to the *infrastructure* under the *grant agreement*, a *user group* must satisfy the following conditions:

a) the *user group* leader and the majority of the *users* must work in a (public or private) institution established in a Member State of the European Union or a State associated with the 7th Framework Programme.

   Applicants who reside outside the European Union (member states and associated states) are supported by JERICO provided they are not the principal applicant, and that they are a minority (less than 50%) in the *user group* proposing the TNA project.

b) the *user group* leader and the majority of the *users* in the group must work in a country other than the country where the legal entity operating the facility is established.

   b.1) When the *user group* is applying for several facilities operated by different legal entities, this condition shall apply to each facility.

   b.2) This condition shall not apply:
   - when the *access provider* is an *International Organisation* or the *JRC*.
   - in case of remote access to a distributed set of *infrastructures* or *installations* offering the same services.

c) Only *user groups* that are entitled to disseminate the *foreground* they have generated under the *project* are eligible to benefit from access free of charge to the *infrastructure* under this *grant agreement*.

4.2 Modality of Access

Unless otherwise specified, access to a specific *infrastructure* (or a specific *installation/facility* that is part of an *infrastructure*) by a *user group* is to be intended as a concession granted to use the *infrastructure* to collect specific data following the implementation of a specific automated measuring system. A written contract or agreement between the "Access Provider" or the "Infrastructure Operator" and the "End User" will delineate the actions to be undertaken, the resources that will need to be allocated, the length of planned *user* stays (if any), and the period of use. It will also define the rights and obligations of all the Parties involved, including eventual provisions for early termination of the conferred access.

Depending on the type of infrastructure/installation, the access can be

- **remote**: the measuring system is implemented by the operator of the installation and the presence of the *user group* is not required,
- **partially remote**: the presence of the *user group* is required at some stage (e.g. installing and un-installing),
- **"in person/hands-on"**: the presence of the *user group* is required/recommended during the whole access period.

Also depending on the type of infrastructure/installation, access may be shared simultaneously by several *user groups* (with independent measuring systems). Note that, sometimes, there may already be at least one permanent user to be considered *a priori*: the operator of the infrastructure.

Unless otherwise stated, the measuring system shall be provided by the *user group.* EU funding may contribute to shipping costs if necessary but this will be evaluated case-by-case.

Whenever possible, the start and end of an access interval will be set to coincide with times scheduled for the ordinary maintenance of the installation in the interests of financial economy (e.g. limiting the costs of vessel-time, etc.).

It is mandatory that a *user group* verifies the particulars of access to the infrastructure/installation it wishes to utilize by contacting the relevant operator.

It is mandatory that user groups interact directly with the manager of the facility/ies they wish to use during the preparation of proposals. This will permit a better understanding of the feasibilities of the proposed projects by the very parties who will be working together if they are approved, while also fostering closer cooperation between them in addressing practical concerns.

5. Selection of projects

Submitted projects will be subjected to a three-step selection process involving:

(i) Validation of each proposal by the manager of the targeted facility (feasibility assessment).

(ii) Evaluation by the Selection Panel (SP) based on scientific excellence, innovation and impacts on the state-of-the-art.

(iii) final assessments by the Selection Panel.

The order of steps (i) and (ii) was inverted by suggestion of the Selection Panel during the meeting held in Heraklion on 1 October 1 2012, to avoid evaluating technically non-feasible proposals.

5.1 The Selection Panel

The Selection Panel (SP) comprises members from the JERICO management team, the five members of the JERICO Scientific Advisory Committee and the three external experts on the Board of the JERICO Forum for Coastal Technology:

- Stefania Sparnocchia, JERICO WP8 leader
- Patrick Farcy, JERICO coordinator
- Pascal Morin, JERICO WP1 coordination team
- Dominique Durand, JERICO WP1 coordination team
- Ingrid Puillat, JERICO WP1 coordination team
- Janet Newton, SAC, University of Washington, USA
- George Zodiatis, SAC, University of Cyprus, Cyprus
- Richard Dewey, SAC, University of Victoria, Canada
- Hans Dalhin, SAC, Director of EUROGOOS
- Roger Proctor, SAC, University of Tasmania, Australia
- Franciscus Colijn, FCT, Helmholtz Zentrum Geesthacht, Germany
- Laurent Mortier, FCT, ENSTA-LOCEAN, France
- Alicia Lavin, FCT, Instituto Español de Oceanografía, Spain

5.2 The Selection criteria

The submitted proposals will be first grouped by facility types (ferryboxes / fixed platforms / gliders / calibration laboratories). Then, each group will be evaluated according to the following criteria for selection:

1. Fundamental scientific and/or technical value; potential interest to the research/service-provider community; originality and innovation.
2. Quality of the work program: clarity of presentation, adequacy in relation to set objectives.
3. Evaluation of risk and payoff
4. Potential for seeding links with Industry.
5. Quality of proposing user group.
6. European relevance.

Criteria 3 and 6 where reformulated with respect to the ones adopted for the 1st call during the Selection Panel meeting of 1 October 2013.

5.3 Approval of proposals

The final ratings of the submitted proposals will be ranked in descending order. Approval will be granted, starting with the proposal that has the highest rating and then working downwards.

Priority will be given to projects where the *user groups*:

- are working in countries where such research infrastructures/installations do not exist;
- have not previously used the infrastructures/installations they are requesting access to.

Projects may be shifted between equivalent installations to match scientific ratings and demand.

The results of the selection will be posted on the JERICO web site. The leader of each selected *user group* will be contacted directly by the manager/operator of the infrastructure/installation chosen for its activities to receive information/guidelines for in person/hands-on access or shipment for remote access.

The *user group* of an approved proposal will be required to enter into a contract or agreement with the manager/operator of the infrastructure/installation chosen for its activities. The contract or agreement will delineate the actions to be undertaken, the resources that will need to be allocated, the length of planned user stays if any, and the period of use. It will also define the rights and obligations of the Parties involved, including eventual provisions for early termination.

6. Accessible facilities (Second Call)

JERICO offers Transnational Access to a number of unique European Coastal Observatories and Calibration Facilities for international research and technology development

Transnational Access is an opportunity for scientists and engineers to obtain free of charge access to coastal observing infrastructures that do not exist in their own countries. These infrastructures include ferryboxes, fixed platforms, gliders, and associated support facilities, i.e. calibration laboratories.

The second Call is open for accessing the following facilities (see Annexv3 for a description of each facility):

Ferryboxes

Facility ID	Facility Provider	Unit of access	Max. access period	Contact	Website
COSYNA_1(FB)	HZG (Germany)	day (24h)	40 days	Wilhelm Petersen wilhelm.petersen@hzg.de	www.cosyna.de
Color Fantasy	NIVA (Norway)	day (24h)	32 days	Kai Sorensen kas@niva.no	www.ferrybox.no
Brittany ferries	CNRS (France)	day (24h)	32 days	Pascal Morin pmorin@sb-roscoff.fr	http://abims.sb-roscoff.fr/hf

Fixed Platforms

Facility ID	Facility Provider	Unit of access	Max. access period	Contact	Website
CRS Lubiatowo	IBWPAN (Poland)	day (24h)	108 days	Rafal Ostrowski rafal.o@ibwpan.gda.pl	http://mlb.ibwpan.gda.pl/index.php/en
ACQUA ALTA	CNR (Italy)	day (24h)	100 days	Mauro Bastianini mauro.bastianini@ve.ismar.cnr.it	http://www.ismar.cnr.it/infrastructures/piattaforma-acqua-alta
MPLS	CNR (Italy)	6 months	12 months	Mireno Borghini mireno.borghini@sp.ismar.cnr.it Katrin Schroeder k.schroeder@ismar.cnr.it	http://www.ismar.cnr.it/infrastructures/observational-sites/catene-correntometriche/il-canale-di-sicilian
COSYNA_2 (PILE)	HZG (Germany)	day (24h)	32 days	Götz Flöser goetz.floeser@hzg.de	http://www.cosyna.de/

Gliders

Facility ID	Facility Provider	Unit of access	Max. access period	Contact	Website
MARS gliders	NERC (United Kingdom)	day (24h)	30 days	David White dwh@noc.ac.uk	http://noc.ac.uk/research-at-sea/nmfss/mars
COSYNA_3 (GLIDER)	HZG (Germany)	day (24h)	80 days	Lucas Merckelbach lucas.merckelbach@hzg.de	http://www.hzg.de/institute/coastal_research/cosyna/011312/index_0011312.html
CETSM	INSU/CNRS (France)	day (24h)	184 days	Pierre Testor testor@locean-ipsl.upmc.fr	http://www.ego-network.org/

Support Facilities (calibration and validation laboratories)

Facility ID	Facility Provider	Unit of access	Max. access period	Contact	Website
OGS-CTO	OGS (Italy)	Week (5 days)	9 weeks	Rajesh Nair rnair@ogs.trieste.it	http://www.ogs.trieste.it/
MPL CAL 6	CNR (Italy)	8h per day	10 days	Stefano Cozzi stefano.cozzi@ts.ismar.cnr.it	http://www.ismar.cnr.it/
MPL CAL 7	CNR (Italy)	8h per day	10 days	Mario Sprovieri mario.sprovieri@iamc.cnr.it	http://www.iamc.cnr.it/

Annexes

A.1 JERICO application for Transnational Access to Coastal Observatories (2nd Call)

File downloadable from http://www.jerico-fp7.eu/tna/calls-and-selection/second-call**.**

A.2 A Guide to JERICO Transnational access activity (2nd Call)

File downloadable from http://www.jerico-fp7.eu/tna/calls-and-selection/second-call.

A.3 Descriptions of facilities available for the second Call

File downloadable from http://www.jerico-fp7.eu/tna/calls-and-selection/second-call/access-facilities.

JERICO

Application for Transnational Access

to Coastal Observatories

2nd Call

14 January 2013 - 18 March 2013

Description of the project (to be provided in pdf format)
Please contact the manager of the infrastructure/installation you wish to use before writing the proposal

PART 1: User group details

Indicate if the proposal is submitted by

O an individual
O a user group

Principal Investigator (user group leader)

Title ___ Name and Surname _____

Gender O Male O Female

Institution _____

Department / Research Group _____

Address _____

_____

Country _____

email _____

Telephone _____

Fax _____

Project partners *(repeat for each member of the user group)*

Partner # 1

Title ___ Name and Surname _____

Gender O Male O Female

Institution _____

Department / Research Group _____

Address _____

_____

Country _____

email _____

Partner # 2

Title ___ Name and Surname _____

Gender O Male O Female

Institution _____

Department / Research Group _____

Address _____

_____

Country _____

email _____

Partner # 3

Title ___ Name and Surname _____

Gender O Male O Female

Institution _____

Department / Research Group _____

Address _____

_____

Country _____

email _____

…
…
…

PART 2: Additional information about the applicant(s) expertise

Expertise of the group in the domain of the application

Short CV of the PI

A list of 5 recent, relevant publications of the participant(s) in the field of the project

1)

2)

3)

4)

5)

PART 3: Detailed scientific description of the project

Title of the project and acronym

List the main objectives of the proposed research including, if possible, its European relevance

(one page maximum)

Give a brief description of the scientific background and rationale of your project

(one page maximum)

Present the proposed experimental method and working plan

(one page maximum)

Indicate the type of access applied for

O remote	*(the measuring system is implemented by the operator of the installation and the presence of the user group is not required)*
O partially remote	*(the presence of the user group is required at some stage e.g. installing and un-installing)*
O in person/hands on	*(the presence of the user group is required/recommended during the whole access period)*

Indicate the proposed time schedule including expected duration of access time ***(half a page maximum)***

Do you think that this proposal has potential for seeding links with Industry? If so, how?

What are the risks, contingencies and payoffs you think you can associate with your proposal?

PART 4: Host infrastructure

Indicate the type(s) of JERICO host facility(s) you are interested in
(Tick more than one if it is useful for your project)

O ferrybox O fixed platform O glider O calibration laboratory

Indicate the specific JERICO host facility(ies) you wish to choose

Explain briefly why you think your project will be best carried out at the specified host facility(ies)

If possible, list other JERICO facility(ies) where you think your experiment could alternatively be carried out

Is there a facility similar to the one you wish to utilize in your country? O Yes O No

If yes, please indicate your reasons for requesting access to the JERICO facility you have chosen

PART 5: Technical information

Wherever possible, please specify your requests regarding the use of your chosen facility's equipment/instruments/sensors, including any additional services, data or other requirements.

List all material/equipment you plan to bring to the JERICO facility (if any):

Please provide a detailed and realistic budget for the expenses you expect to incur for travel/boarding and the shipment of equipment, if applicable in your case *(note that a maximum of two travel grants will be assigned to each user group, depending on the length of the requested period of stay).*

Please tick the appropriate boxes and give detailed information for the kind of risks associated with your proposed activity

☐ Chemical : _____

☐ Biological : _____

☐ Radiological : _____

☐ Other : _____

PART 6: Additional information

Have you already submitted an Access Proposal to any of the participating facilities under this or previous EU Programs? O Yes O No
If yes, please indicate the name of the institution, submission date and reference number for each such proposal

Is this a resubmission of a previously rejected proposal? O Yes O No *(Select "yes" if this application is a revised version of a proposal submitted to JERICO before that was rejected by the Selection Panel)*
If yes, please give the exact reference number and submission date. Kindly describe briefly the changes made in comparison to the rejected version.

Is this a continuation of an earlier project funded under a previous call for Transnational Access in JERICO at the same facility? O Yes O No
If yes, please give the exact reference number and submission date. Kindly indicate also what has been achieved in the previous experiment and the reasons why the objectives have not been fully met.

Date of compilation _____

Signature of the PI _____

Signature of an appropriate authorised person
(e.g. Head of Department, Research Office) _____

This section reserved to the JERICO TNA Office

Date of proposal receipt by email _____

Assigned reference number _____

Signature of receiving officer _____

A Guide to JERICO Transnational Access Activity (2nd Call)

Project website:
www.jerico-fp7.eu

TNA webpages:
http://www.jerico-fp7.eu/tna

Version 16.01.2013

1. Scope

The primary objective of the JERICO Transnational Access (TNA) activity is to enable scientists and engineers to freely access coastal infrastructures not available in their own countries. The JERICO Consortium includes research facilities such as ferryboxes, fixed platforms, gliders, and associated calibration laboratories.

The second call for access to the JERICO Coastal Observatories and Calibration Facilities will open **from 14 January 2013 to 18 March 2013** with activities scheduled to start in the early summer of 2013 subsequent to a formal screening and selection process.

The facilities available for the 2nd Call are described in the JERICO website[1].

2. Access

Free-of-charge access to the facilities specified in the TNA context will be granted following the evaluation of proposals submitted by *user groups* for their utilization in response to dedicated Calls during the lifetime of the JERICO project.

Proposals have to be drawn up following the template available in the JERICO website[2] and sent by email to **JERICO.TNA@ismar.cnr.it** within **MARCH 18th, 2013, 23:59 HOURS (CET)**

A *user group* can be a single researcher (user) or a team of two or more researchers (users) satisfying specific eligibility conditions (see section 2.1).

The evaluation of submitted TNA proposals will be conducted via a selection process that will assess them for scientific excellence, innovation and eventual impacts on the state-of-the-art.

The access conceded will include logistical, technical and scientific support by the *access provider* (or *infrastructure/facility operator*), and any special training that a *user group* may require to use an assigned *infrastructure/facility*.

JERICO will contribute to the travel and subsistence costs relating to visits by users, whenever necessary. A maximum of two travel grants will be assigned to each user group, depending on the length of the requested period of stay.

2.1 Eligibility of *user groups*

To be eligible to benefit from access to the *infrastructure* under the *grant agreement*, a *user group* must satisfy the following conditions[3]:

a) the *user group* leader and the majority of the *users* must work in a (public or private) institution established in a Member State of the European Union or a State associated with the 7th Framework Programme.

[1] http://www.jerico-fp7.eu/tna/calls-and-selection/second-call/access-facilities.
[2] http://www.jerico-fp7.eu/tna/calls-and-selection/second-call
[3] ftp://ftp.cordis.europa.eu/pub/fp7/docs/fp7-ga-annex3-infra_en.pdf

a.1) Associated States: Switzerland, Israel, Norway, Iceland, Liechtenstein, Turkey, Croatia, the Former Yugoslav Republic of Macedonia, Serbia, Albania, Montenegro, Bosnia and Herzegovina, Faroe Islands[4].

a.2) Applicants who reside outside the European Union (member states and associated states) are supported by JERICO provided they are not the principal applicant, and that they are a minority (less than 50%) in the *user group* proposing the TNA project.

b) the *user group* leader and the majority of the *users* in the group must work in a country other than the country where the legal entity operating the facility is established.

b.1) When the *user group* is applying for several facilities operated by different legal entities, this condition shall apply to each facility.

b.2) This condition shall not apply:
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Unless otherwise specified, access to a specific *infrastructure* (or a specific *installation/facility* that is part of an *infrastructure*) by a *user group* is to be intended as a concession granted to use the *infrastructure* to collect specific data following the implementation of a specific automated measuring system. A written contract or agreement between the “Access Provider“ or the “Infrastructure Operator” and the “End User” will delineate the actions to be undertaken, the resources that will need to be allocated, the length of planned *user* stays (if any), and the period of use. It will also define the rights and obligations of all the Parties involved, including eventual provisions for early termination of the conferred access.

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- **"in person/hands-on"**: the presence of the *user group* is required/recommended during the whole access period.

Also depending on the type of infrastructure/installation, access may be shared simultaneously by several *user groups* (with independent measuring systems). Note that, sometimes, there may already be at least one permanent user to be considered *a priori*: the operator of the infrastructure.

[4] Other countries may become associated during the course of FP7, verify at http://cordis.europa.eu/fp7/who_en.html.

Unless otherwise stated, the measuring system shall be provided by the *user group.* EU funding may contribute to shipping costs if necessary but this will be evaluated case-by-case.

Whenever possible, the start and end of an access interval will be set to coincide with times scheduled for the ordinary maintenance of the installation in the interests of financial economy (e.g. limiting the costs of vessel-time, etc.).

It is mandatory that a *user group* verifies the particulars of access to the infrastructure/installation it wishes to utilize by contacting the relevant operator.

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Submitted projects will be subjected to a three-step selection process involving:

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(iii) final assessments by the Selection Panel.

3.1 The Selection Panel

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- Patrick Farcy, JERICO coordinator
- Pascal Morin, JERICO WP1 coordination team
- Dominique Durand, JERICO WP1 coordination team
- Ingrid Puillat, JERICO WP1 coordination team
- Janet Newton, SAC, University of Washington, USA
- George Zodiatis, SAC, University of Cyprus, Cyprus
- Richard Dewey, SAC, University of Victoria, Canada
- Hans Dalhin, SAC, Director of EUROGOOS
- Roger Proctor, SAC, University of Tasmania, Australia
- Franciscus Colijn, FCT, Helmholtz Zentrum Geesthacht, Germany
- Laurent Mortier, FCT, ENSTA-LOCEAN, France
- Alicia Lavin, FCT, Instituto Español de Oceanografía, Spain

3.2 The Selection criteria

The submitted proposals will be first grouped by facility types (ferryboxes / fixed platforms / gliders / calibration laboratories). Then, each group will be evaluated according to the following criteria for selection:

- Fundamental scientific and/or technical value; potential interest to the research/service-provider community; originality and innovation.
- Quality of the work program: clarity of presentation, adequacy in relation to set objectives.
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- Potential for seeding links with Industry.
- Quality of proposing user group.
- European relevance.

3.3 Approval of proposals

The final ratings of the submitted proposals will be ranked in descending order. Approval will be granted, starting with the proposal that has the highest rating and then working downwards.

Priority will be given to projects where the *user groups*:

- are working in countries where such research infrastructures/installations do not exist;
- have not previously used the infrastructures/installations they are requesting access to.

Projects may be shifted between equivalent installations to match scientific ratings and demand.

The results of the selection will be posted on the JERICO web site. The leader of each selected user group will be contacted directly by the manager/operator of the infrastructure/installation chosen for its activities to receive information/guidelines for in person/hands-on access or shipment for remote access.

The *user group* of an approved proposal will be required to enter into a contract or agreement with the manager/operator of the infrastructure/installation chosen for its activities. The contract or agreement will delineate the actions to be undertaken, the resources that will need to be allocated, the length of planned *user* stays if any, and the period of use. It will also define the rights and obligations of the Parties involved, including eventual provisions for early termination.

4. Post-access requirements

After the end of the project, the user group leader must submit

1) a report describing the scientific output of the access received. Details regarding the report format and submission deadline will be sent out via email in due time. The reports will be published on the JERICO web site and made available to the European Commission.

2) The *User Group Questionnaire*[5] aimed at assisting the Commission to evaluate the Research Infrastructures Action, to monitor the individual contracts, and to improve the services provided to the scientific community. When completing the questionnaire, the JERICO contract number

[5] http://cordis.europa.eu/fp7/capacities/questionnaire_en.html

(262584) and the acronym of the user project must be indicated. The questionnaire must be submitted once as soon as the experiment on the infrastructure come to end.

Moreover,

3) Any publications or patents resulting from the JERICO TNA project must be reported to the host institute and the JERICO TNA office. Details regarding the report format will be sent out via email in due time. Furthermore, all such publications or patents must also contain references to the JERICO grant agreement (no. 262584) and acknowledgements to the host institute.

Contact details

JERICO TNA Office
Dr. Stefania Sparnocchia
Istituto di Scienze Marine, Consiglio Nazionale delle Ricerche
Viale Romolo Gessi, 2
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Tel.: +39 040305312
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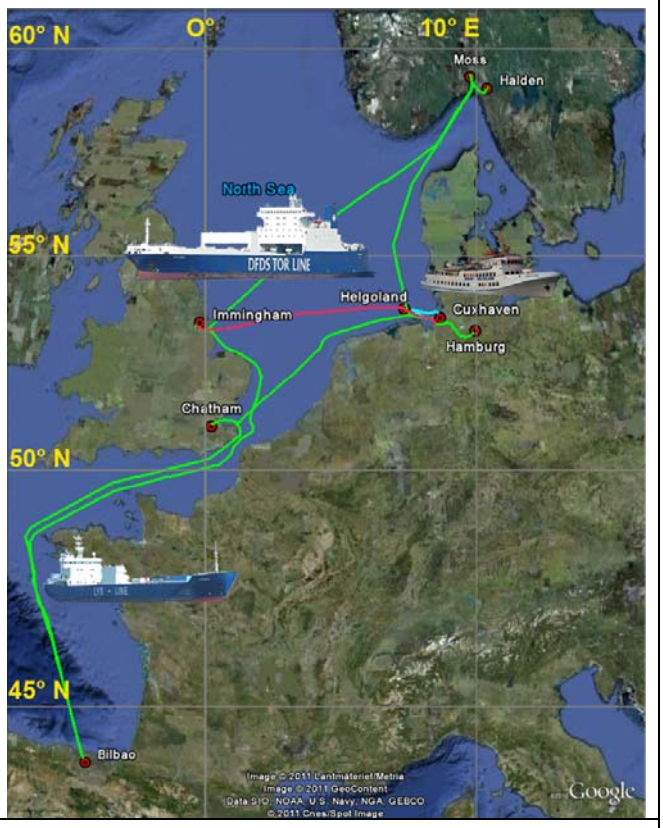
Facilities available for the Second Call

Infrastructure (short name)	Coastal Observation System for Northern and Arctic Seas (COSYNA)
Installation (short name)	FerryBox (COSYNA_1 FB)
Location	North Sea
Routes	**TorDania**: Cuxhaven <-> Immingham **LysBris**: Cuxhaven -> Chatham -> Bilbao -> Immingham -> Moss -> Halden -> Cuxhaven **FunnyGirl**: Summer: Buesum <-> Helgoland; Winter: Cuxhaven <-> Helgoland



Legal name of organization	Helmholtz-Zentrum Geesthacht, Institute of Coastal Research
Location of organization	Geesthacht, Germany
Contact	Dr. Wilhelm Petersen, wilhelm.petersen@hzg.de Institute of Coastal Research/Operational Systems Helmholtz-Zentrum Geesthacht Max Planck Str. 1, D-21502 Geesthacht, Germany Phone: +49 (0) 4152 87 2358 Fax: +49 (0) 4152 87 2366
Web site address	http://www.cosyna.de and http://www.ferrybox.de

Description
COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea. It is being developed by institutes of the German Marine Research Consortium (KDM) and collaborating institutions and is operated by the HZG Research Centre. The infrastructure represents an investment of 9 M €. It is build up in two phases over 6 years: COSYNA_1 (FB) is based on 3 FerryBox lines. The FerryBoxes are equipped with hydrographical sensors to measure temperature, salinity, oxygen, chlorophyll-a fluorescence, turbidity, pH and nutrients (partly). The three FerryBoxes are installed on three ships on different routes. The TorDania is an Ro/Ro-Ship and cruises from Cuxhaven (Germany) to Immingham in England towards and back in three days. The cargo ship Lysbris cruises in a circle from Cuxhaven (DE) - Chatham (GB) – Bilbao (ES)- Immingham (GB) – Moss (NL) – Halden (NL) and back to Cuxhaven in about 14 days. The

passenger ferry Funnygirl cruises seasonal on different routes dependent on season. In summer it departs from Buesum (DE) and in winter from Cuxhaven (DE). The destination is always the island Helgoland. The ship drives toward and back on a daily bais..

Service offered

HZG will give access to three ferryboxes. The access will consist in hosting visitors for experiments onboard the ships and also for installation of users' equipment on FerryBoxes.

The support team consists of technicians and scientists who prepare the instrumentation and service the instrumented ferry.

Instruments/Sensors

The following instrumentation is already onboard the ferry and will be available to the JERICO users

TorDania

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
ETSG 2 - M, Falmouth Scientific	Temperature	**5 m water depth**	**10 sec.**	**2 times in 3 days**
ETSF2-M, Falmouth Scientific	Conductivity	**5 m water depth**	**10 sec.**	**2 times in 3 days**
ETSF2-M, Falmouth Scientific	Salinity	**5 m water depth**	**10 sec.**	**2 times in 3 days**
TurbiMaxW CUS 31, Endress+Hauser	Turbidity	**5 m water depth**	**10 sec.**	**2 times in 3 days**
SCUFA-II, Turner Designs	Turbidity	**5 m water depth**	**10 sec.**	**2 times in 3 days**
SCUFA-II Turner Designs	Chlorophyll-a fluorescence	**5 m water depth**	**10 sec.**	**2 times in 3 days**
Algae-Online-Analyser, bbe moldaenke	Chlorophyll-a fluorescence	**5 m water depth**	**10 sec.**	**2 times in 3 days**
Oxygen optode 4330, Aandera	diss. oxygen	**5 m water depth**	**10 sec.**	**2 times in 3 days**
CPS11, Endress + Hauser	pH	**5 m water depth**	**10 sec.**	**2 times in 3 days**
EGA140 SMEK, Sensortechnik Meinsberg	pH	**5 m water depth**	**10 sec.**	**2 times in 3 days**
µMac 1000, Systea	Ammonium, Nitrate, Phosphate, Silicate	**5 m water depth**	**10 sec.**	**2 times in 3 days**

Lysbris

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
ETSG 2 - M, Falmouth Scientific	Temperature	**5 m water depth**	**20 sec.**	**Every 2days**
ETSF2-M, Falmouth Scientific	Salinity	**5 m water depth**	**20 sec.**	**Every 2days**
ETSF2-M, Falmouth Scientific	Conductivity	**5 m water depth**	**20 sec.**	**Every 2days**
TurbiMaxW CUS 31, Endress+Hauser	Turbidity	**5 m water depth**	**20 sec.**	**Every 2days**
SCUFA, Turner Designs	Turbidity	**5 m water depth**	**20 sec.**	**Every 2days**
SCUFA, Turner Designs	Chlorophyll-a fluorescence	**5 m water depth**	**20 sec.**	**Every 2days**
Algae-Online-Analyser, bbe moldaenke	Chlorophyll-a fluorescencel	**5 m water depth**	**20 sec.**	**Every 2days**

Algae-Online-Analyser, bbe moldaenke	Yellow substance	**5 m water depth**	**20 sec.**	**Every 2days**
Oxygen optode 4330, Aandera	diss. oxygen	**5 m water depth**	**20 sec.**	**Every 2days**
CPS11, Endress + Hauser	pH	**5 m water depth**	**20 sec.**	**Every 2days**
EGA140 SMEK, Sensortechnik Meinsberg	pH	**5 m water depth**	**20 sec.**	**Every 2days**
µMac 1000, Systea	Ammonium, Nitrate, Phosphate, Silicate	**5 m water depth**	**20 sec.**	**Every 2days**

Funny Girl

Instrument	**Measured Parameter(s)**	**Elevation/Depth**	**Sampling frequency**	**Transmission frequency**
ETSG 2 - M, Falmouth Scientific	Temperature	**5 m water depth**	**60 sec.**	**2 per day**
ETSF2-M, Falmouth Scientific	Conductivity	**5 m water depth**	**60 sec.**	**2 per day**
ETSF2-M, Falmouth Scientific	Salinity	**5 m water depth**	**60 sec.**	**2 per day**
SCUFA, Turner Designs	Turbidity	**5 m water depth**	**60 sec.**	**2 per day**
SCUFA, Turner Designs	Chlorophyll-a fluorescence	**5 m water depth**	**60 sec.**	**2 per day**
Cyclops-7_U, Turner Designs	CDOM	**5 m water depth**	**60 sec.**	**2 per day**
Oxygen optode 4330, Aandera	Oxygen	**5 m water depth**	**60 sec.**	**2 per day**
EGA140 SMEK, Sensortechnik Meinsberg	pH	**5 m water depth**	**60 sec.**	**2 per day**
EGA140 SMEK, Sensortechnik Meinsberg	pH	**5 m water depth**	**60 sec.**	**2 per day**

Additional services/data

Other activities within the observatory COSYNA are linked to the pile and glider activities.

Special owner rules

none

Infrastructure (short name)	Norwegian Ferrybox Network (NorFerry)	
Installation (short name)	M/S Color Fantasy	
Location	Oslo fjord, Skagerrak, Kattegat, and Kiel bight.	
Route	Oslo –Kiel	
Legal name of organization	Norsk Institutt for Vannforskning, NIVA	
Location of organization	Oslo, Norway	
Contact	Kai Sørensen, kas@niva.no NIVA, Gaustadalléen 21, NO-0349 OSLO Direct/Mobile: + 47 90732129 Telephone: + 47 22185100 Fax: + 47 22185200	
Web site address	www.ferrybox.no	

Description

The Norwegian Ferrybox network (NorFerry) consists of three ships operated by the Norwegian Institute for Water Research (NIVA). Together, these vessels cover 80% of the Norwegian coast.

M/S Color Fantasy is operated by Color Line and is the world's largest cruise ship with a car deck. The ship cruises between Oslo (Norway) and Kiel (Germany) in the Oslo fjord, Eastern Skagerrak, Kattegat and Baltic Sea entrance regions. One return trip lasts for about 44 hours.

The Ferrybox core installations include the following sensors: thermosalinograph, inlet temperature, AADI oxygen, Polymetron turbidity sensor and TriOS Chl-a fluorescence. M/S Color Fantasy is equipped in addition with TriOS yellow substance, TriOS cyanobacteria fluorescence, and TRIOS hydrocarbon sensors. NIVA is also involved in the development of a new type of pCO2 sensor with Franatech for integration on the same ferrybox platform during the first part of 2013. Also one photometric pH system will be installed in early 2013. A system for automatic extraction and pre-concentration unit of chemical compounds in water was installed in the end of 2012. An automatic water sampler of 24*1 liter is also installed. Finally, TriOS radiance and irradiance sensors are mounted on deck for the measurements of solar irradiance, sky and water-leaving radiance.

Service offered

Users are invited onboard for one or repeated periods of trips (days to weeks, for installation and testing of new sensors (contaminants, carbon cycle, acidification, algae discrimination), inter-calibration of sensors, as well as testing of new monitoring approaches, taking advantage of the high-frequency 2D sampling of the infrastructure.

We invite in particular (but not only) researchers interested in investigating methods for vertical profiling from ferries (e.g. XBT/XCTD experts) to apply for accessing the infrastructure and take part in gathering a unique dataset of simultaneous Ferrybox and underway profiles.

Access to the ferry requires that NIVA personnel, both scientific and technical, are on-board with

the guest scientists. Personnel from NIVA will be in charge of the integration of guest's sensors into the NIVA's Ferrybox system. Inter-calibration, data acquisition and other experiments will preferably be jointly made by NIVA and guest users.

The access to the ship is simple and can be done both in Oslo and Kiel. One can bring the equipment with own car onboard the ship and there are easy access to the installation. A small laboratory bench with warm and cold water, refrigerator and freezers are available as well as tools for repair of instruments e.g. there are also internet access by the system. The accommodation onboard is excellent with good capacity.

Instruments/Sensors

The following instrumentation is already onboard the ferry and will be available to the JERICO users

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
SBE45	Temperature	4m depth	1 minute under normal conditions. Can be increased up to 10s for a short period if required.	Once a day. Can be improved to real time transmission for a short period if required.
SBE38	Inlet temperature	4m depth		
SBE45	Salinity	4m depth		
AADI optode	Dissolved oxygen	4m depth		
AADI optode	Inlet dissolved oxygen	4m depth		
Polymetron	Turbidity	4m depth		
TriOS	Chl-A fluorescence	4m depth		
TriOS	Yellow substance fluorescence	4m depth		
TriOS	Cyanobacteria fluorescence	4m depth		
TriOS	Hydrocarbon	4m depth		
TriOS	Irradance	4m depth	1 minute under normal conditions. Can be increased up to 30s for a short period if required.	
TriOS	Sky radiance starboard	30m above sealevel		
TriOS	Sky radiance port	30m above sealevel		
TriOS	Water leaving radiance starboard	30m above sealevel		
TriOS	Water leaving radiance starboard	30m above sealevel		
ISCO-sampler	Water samples	4m depth	Not relevant	

The following instrumentation will be installed during 2013 and will also be made available to the JERICO users.

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
Franatech/NIVA	pCO2	4m depth	1 minute (TBC)	Once a day. Can be improved to real time transmission for a short period if required
NIVA	Photometric pH	4m depth	1 minute (TBC)	Once a day. As above

Additional services/data

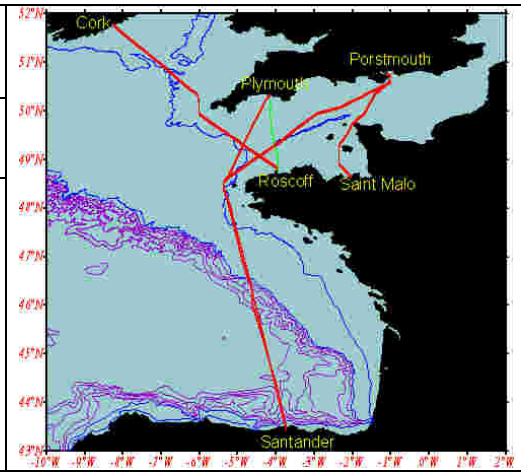
Routine discrete samplings for long-term series

The following parameters are obtained from regular automatic sampling onboard and laboratory analysis and will be available to the JERICO users on specific request.

Parameter(s)	Elevation/Depth	Sampling frequency	Sampling Technique/Analytical method
Phytoplankton	4m depth	14days but can be increased up to 1day on request (up to 24 samples/stations per trip)	Phytoplankton counting on some station
Particulate (TSM)	4m depth	14days but can be increased up to 1day on request (up to 24 samples/stations per trip)	On request and are done for satellite calibration
Nutrients	4m depth	14days but can be increased up to 1day on request (up to 24 samples/stations per trip)	Standard water sampling and analysis in NIVA laboratory on request.
Contaminants	4 m depth	TBD	Automatic extraction and pre-concentration unit of chemical compounds
Chlorophyll (Other pigments on request). Pigment and detrital absorption spectra	4m depth	14days but can be increased up to 1day on request (up to 24 samples/stations per trip)	HPLC and/or spectrophotometric Absorption spectra on water samples on request.

Special owner rules

NIVA's personnel will join the trips as a minimum of the installation and introduction to the ship, crew and system.

Installation (short name)	Ferry Boxes Pont Aven / Armorique	
Location	Western Channel, Celtic Sea, bay of Biscay	
Route	**Armorique:** Roscoff-Plymouth **Pont Aven:** Porstmouth-Santander, Plymouth-Santander Roscoff-Plymouth Roscoff-Cork	
Legal name of organization	CNRS/INSU	
Location of organization	Roscoff, France	
Contact	Pascal Morin, pmorin@sb-roscoff.fr Observatoire Océanologique de Roscoff Place Georges Teissier 29688 Roscoff cedex Phone +33 298292317 Fax +33 298292324	
Web site address	abims.sb-roscoff.fr/hf	

Description
The French Ferrybox network consists of two car ferries jointly operated by the Institut National des Sciences de l'Univers/Centre National de la Recherche Scientifique (INSU/CNRS) and the Institut Français pour l'Exploitation de la Mer (Ifremer). Together, these vessels cover 4 different lines: between Roscoff (France) and Plymouth (United Kingdom), between Roscoff (France) and Cork (Ireland), between Porstmouth (United Kingdom) and Santander (Spain) and between Plymouth (United Kingdom) and Santander (Spain). The Roscoff-Plymouth line is operated on a daily basis by M/V Armorique (2 transects per day) and the four lines operated on a weekly basis by M/V Pont Aven. More information about the ships and operated lines can be found at abims.sb-roscoff.fr/hf. The ferrybox core installations include the following sensors: thermosalinograph (SBE-45), inlet temperature (SBE-38), AADI oxygen (optode), Turner Designs C3 turbidity, chlorophyll fluorescence and CDOM sensors. Since 2012 an additional Contros pCO2 sensor has been installed on M/V Armorique. The access to the ships can be done both in Roscoff, Plymouth, Porstmouth, Santander and Cork with a preference in Roscoff to benefit of the support team.

Service offered

CNRS/INSU and Ifremer will give access to the two ferryboxes for one or repeated periods of trips (days to weeks) for installation and testing of users'equipment on Ferry Boxes. We invite in particular (but not only) researchers interested in investigating methods for vertical profiling from ferries (e.g. XBT/XCTD experts) to apply for accessing the infrastructure and take part in gathering a unique dataset of simultaneous ferrybox and underway profiles.

Instruments/Sensors

The following instrumentation is already onboard the ferry and will be available to the JERICO users

Armorique

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
SBE45	Temperature	4m depth	1 minute under normal conditions.	Once a day.
SBE38	Inlet temperature	4m depth		
SBE45	Salinity	4m depth		
AADI optode	Dissolved oxygen	4m depth		
Turner Designs C3	Turbidity	4m depth		
Turner Designs C3	Chl-a fluorescence	4m depth		
Turner Designs C3	Colored Dissolved Organic Matter	4m depth		
Contros	pCO2	4m depth		
ISCO	Water samples	4m depth	Not relevant	

Pont Aven

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
SBE45	Temperature	4m depth	1 minute under normal conditions.	Once a day.
SBE38	Inlet temperature	4m depth		
SBE45	Salinity	4m depth		
AADI optode	Dissolved oxygen	4m depth		
Turner Designs C3	Turbidity	4m depth		
Turner Designs C3	Chl-a fluorescence	4m depth		
Turner Designs C3	Colored Dissolved Organic Matter	4m depth		

Additional services/data
Other activities within the Roscoff Observatory are linked to a fixed multiparametric buoy (http://application.sb-roscoff.fr/astan/) and multiparametric low frequency (14 days) activities with the french SOMLIT network (http://somlit.epoc.u-bordeaux1.fr/fr/)
Special owner rules
CNRS/INSU and Ifremer's personnel will join the trips as a minimum of the installation and introduction to the ship, crew and system.

Infrastructure (short name)	Coastal Research Station in Lubiatowo (CRS Lubiatowo)
Installation (short name)	Coastal Research Station (CRS)
Location	Lubiatowo, Poland, south Baltic Sea
Coordinates	54° 48' 42" N, 17° 50' 25.6" E (station building)
Bottom depth	nearshore zone (0-5 m)
Legal name of organization	Institute of Hydro-Engineering of the Polish Academy of Sciences (IBW PAN)
Location of organization	Gdańsk, Poland
Contact	Rafal Ostrowski, rafal.o@ibwpan.gda.pl Institute of Hydro-Engineering of the Polish Academy of Sciences (IBW PAN) ul. Kościerska 7, 80-328 Gdańsk, Poland Phone: +48 58 522 29 52 Fax: +48 58 552 42 11
Web site address	http://mlb.ibwpan.gda.pl/index.php/en

Description

The IBW PAN Coastal Research Station (CRS) is located at Lubiatowo (Poland), approximately 75 km NW from Gdańsk, at the open sea shore between Łeba and Władysławowo (about 20 km eastwards of Łeba). The laboratory was established in 1970 in an old building of the former coastal rescue station. Situated in a coastal forest, about 100 m from the beach, the building was adapted for the needs of scientific research. At present, it houses office and laboratory rooms, a garage, an electro-mechanic shop and a few residential rooms.

The Station is prepared to activities related to observations of meteorological, hydrological, hydrodynamic and litho-dynamic phenomena occurring in the Baltic coastal zone. It used to encompass measuring towers arranged in a row, perpendicular to the shoreline. Their role was to accommodate sensors and measuring devices. Last winter all the towers were seriously damaged due to impact of storm waves and ice phenomena. Until their reconstruction, the measurements are carried out by use of smaller structures built in the sea near the towers. These structures ensure installation of measuring equipment at desired locations, as required by specific investigation programmes. The control of devices, power supply and the data registration can be provided by the permanent cable system stretching from the station building to piles located on the dune. Besides, autonomous battery-powered sensors with built-in memory are used, as well as gauges with radio data transmission systems.

Within routine measurements, winds parameters at the laboratory are registered continually, as well as some other hydro-meteorological parameters, e.g. air humidity, air and water temperature, etc. State of the sea can be observed by the camera installed on the beach. Wave measurements at Lubiatowo are carried out by use of the Directional Waverider Mk. III buoy (DWR-7), moored about 2 km offshore, at the depth of about 15 m. Results of all the above measurements are available on the CRS Lubiatowo web page.

Long-term variability of dune and beach is monitored regularly every month since 1983. Sea bottom topography in the near-shore zone has been measured in the area 2.6 km along shore and about 1 km offshore.

Service offered

The measuring devices available at CRS Lubiatowo will be offered to be used by users and will be installed on the temporary structures. Selection of the equipment will depend on the user's preferences. The core part of equipment will comprise the IBW PAN instrumentation for measurements of hydro-, litho- and morphodynamic processes. The infrastructure is also offered for installation of the sensors and probes provided by the users. Scientific support will be provided by the IBW PAN research staff while the installation will be done by the IBW PAN technical staff.

Unit of access: 24 hour day

Modality of access: remote or partially remote. Both measuring systems provided by the host and by the users can be installed.

Instruments/Sensors

The following instrumentation is already installed or available for deployment

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
Wind meter	Wind velocity & direction	22 m above land	1 Hz	10 minutes
Meteorological station	Air temperature & humidity	5 m above land	1 Hz	10 minutes
Wave buoy Directional Waverider Mk. III	Wave heights, periods & directions, water temperature	2 km offshore (h=16 m)	3 Hz	30 minutes
ADCP Workhorse Monitor 1200 kHz	Current velocity & direction (profile)	available	2 Hz	to be defined
Electromagnetic current meters	Current velocity & direction (point)	available	10 Hz	30 minutes
String (electric) shallow-water wave gauges	Wave height & period	available	10 Hz	30 minutes
LISST-100	Concentration and size of suspended sediments	available	2 Hz	to be defined
GPS-positioned drifters	Current velocity & direction (trace)	available	1 Hz	to be defined
Echo-sounders	Water depth	available	7 Hz	7 Hz

Additional services/data

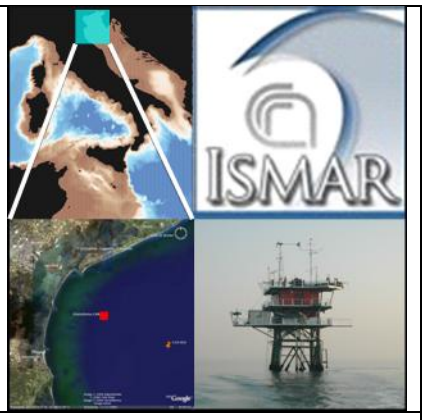
The following parameters are obtained from routine measurements and will be available to the JERICO users on specific request:

- topography of dunes and emerged part of the beach since 1983 (measured a few times per year);
- nearshore bathymetry (to the depth of about 7-8 m) since 1987 (measured at least once per year);
- archival hydrodynamic (wave/current) data.

Special owner rules

The CRS Lubiatowo is partly sponsored by the Polish Academy of Sciences which is a governmental non-profit organisation. The data provided by CRS Lubiatowo may not be used for commercial purposes. The use of data is restricted to studies related to the IBW PAN statutory research programme, as well as domestic and international scientific projects, including ventures carried out within EU, e.g. under auspices of the Framework Programmes.

Infrastructure (short name)	CNR-Marine Platforms and Laboratories (CNR-MPL)
Installation (short name)	Acqua Alta Oceanographic Tower (ACQUA ALTA)
Location	Mediterranean Sea, Northern Adriatic, Gulf of Venice
Coordinates	45°18.83'N – 12°30.53'E
Bottom depth	16 m
Legal name of organization	Consiglio Nazionale delle Ricerche CNR
Location of organization	Rome, Italy
Contact	Mauro Bastianini, mauro.bastianini@ismar.cnr.it Institute of Marine Sciences, National Research Council (ISMAR CNR) Castello 1364/a, 30122 Venezia, Italy Phone: +39 041 2404711 - Fax: +39 041 5204126
Web site address	http://www.ismar.cnr.it/infrastructures/piattaforma-acqua-alta



Description

The "Acqua Alta" research tower was installed on January 1970 15 km off the city of Venice, Italy, in 16 m of water (MLLW). This tower consists of a platform containing an instrument house, supported by a steel pipe structure, similar to that of an oil well derrick. The pipe structure is hammered 22 m into the bottom through each of its four hollow legs. Energy is supplied at 125, 220, 380 VAC (50 Hz – remote activation), along with continuous voltage 12 and 24 VDC.

The tower can host two technicians and three scientists for several days and allows specific dedicated campaigns and long-term measurements.

A broadband wireless communication system between the tower and the operating Institute allows 10 Mb/s data communication rate and real time data availability. The bridge allows the tower to be part of the Institute LAN so all the scientists on board can access internet and potentially all the instruments could be controlled remotely.

Measurements routinely acquired with periodic sampling concern biology, chemistry, physical oceanography. Autonomous instrumentations cover atmospheric and hydrological parameters with a series of meteorological stations (wind, air and water temperature, atmospheric pressure, humidity, rain) and a series of oceanographic instruments (waves, currents along the column with ADCP, temperature at surface and bottom, salinity, turbidity, oxygen, chlorophyll *a* and sea level). A direct view of the sea condition around the tower is available continuously by the three high resolution webcams installed on the roof. Two underwater webcams are installed at -3 and -12 m to observe biological populations and to monitor potentially critical phenomena such as jellyfish swarms and mucilaginous macro aggregates.

Given the high level of security on board and wide desk space, sophisticated instruments can be hosted on board reducing drastically the risk of loss (when not in service the tower is locked and a video surveillance is active). The good level of logistic support allows the setup of in situ experiments.

The wave measurements provide the longest European directional time series (29 years). The worst storm ever experienced was on December 22, 1979, when heavy damage was found up to

9 metres above the mean sea level.

The tower has been used as calibration point for instruments on board of the ERS-1 and SEAWIFS satellites.

Service offered

The “Acqua Alta” tower is a wet and dry laboratory able to host three scientists supported by one technician and two seamen. The high degree of safety (Video surveillance onboard) allows the setup and deployment of high-cost instruments; furthermore with the availability of wideband connection, instruments can be remotely controlled.

The installation is available for TransNational Access to JERICO users for specific experiments, tests of sensors and in-situ validation.

A support team formed by one technician and two sea-men, coordinated by a head scientist will assist the user group, helping during installing/uninstalling operations.

The user will have access to the infrastructure by boat, this service will be arranged by the operator.

The data will be immediately available to the user accessing the laboratory or also remotely in case of protracted installation of user’s instrumentation.

Instruments/Sensors

The following instrumentation is already onboard the tower and will be available to the JERICO users

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
Meteo station Davis Vantage Pro2	Wind speed and direction Air temperature Humidity	+ 17 m	30 min	30 min
Nortek Awac	Current Profiles	from -1 to -15 m	30 min	30 min
Nortek Awac	Waves (high, dir period)	sea surface	30 min	30 min
SeaCAT	Temperature Oxygen Conductivity/Salinity Turbidity	- 5 m, -13 m	60 min	60 min

Additional services/data

Routine discrete samplings for long-term series

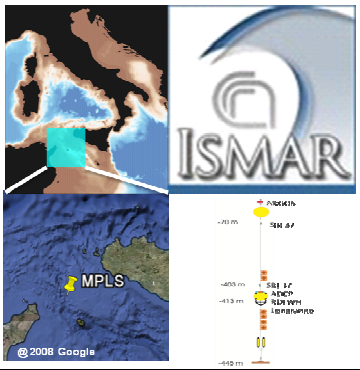
The following parameters are obtained from regular manual sampling and laboratory analysis and will be available to the JERICO users on specific request:

Parameter(s)	Elevation/Depth	Sampling frequency	Sampling Technique /Analytical method
Particulate flux	+ 13 m	30 days	Deposimeter
Phytoplankton	-1 and -15 m	30 days	Utermohl
Particulate	-1 and -15 m	30 days	Gravimetric CHN
Nutrients	-1 and -15 m	30 days	Autoanalyzer
Clorophyll	-1 and -15 m	30 days	Fluorimetric

Special owner rules

Researchers must provide an insurance statement. All lodging, meals and travel (from CNR Institute) to the tower coasts are covered by CNR, no smoking is allowed on board, safety equipment is not provided.

Infrastructure (short name)	CNR-Marine Platforms and Laboratories (CNR-MPL)
Installations (short name)	Sicily Channel mooring (MPLS)
Locations	Mediterranean Sea, Tyrrhenian Sea, Sicily Channel
Coordinates	S: 37°23.00'N - 11°35.50'E
Bottom depth	S: 500 m
Legal name of organization	Consiglio Nazionale delle Ricerche CNR
Location of organization	Rome, Italy
Contact	Mireno Borghini, mireno.borghini@sp.ismar.cnr.it, Phone: +39 0187978313 Katrin Schroeder, katrin.schroeder@ismar.cnr.it, Phone: +30 041 2407946 Institute of Marine Sciences, National Research Council (ISMAR CNR) Forte Santa Teresa, 19036 Pozzuolo di Lerici (SP), Italy
Web site address	http://www.ismar.cnr.it/infrastructures/observational-sites/catene-correntometriche/il-canale-di-sicilia



Description

Sicily Channel, MPLS: Underwater installation moored at about 500 m depth between Sicily and Tunisia, out of the wide Sicilian continental shelf and on the western sill of the Sicily Channel. It performs continuous monitoring of the surface and intermediate exchange of water masses between eastern and western basins of the Mediterranean Sea. Equipped with traditional current meters and ADCP, it has been operative since 1993. At great depths it is furnished by high precision CTD probes for continuous measurement of hydrological parameters. The site is part of the CIESM Hydro-Changes Programme.

Maintenance and data recovery are managed twice per year. Developments towards real time data transmission are planned for both installations.

In occasion of the 6-month maintenance, which is done using a fully equipped research vessel, along the transect connecting the edges of the channel, additional measurements are carried out, which will be available to the JERICO users on specific request. Those are physical (CTD stations, vessel mounted ADCP, lowered ADCP profiles) and chemical (dissolved oxygen, dissolved inorganic nutrients) measurements.

Service offered

The underwater installation in the Sicily Channel is available for Trans National Access to JERICO users for specific experiments, tests of sensors and in-situ validation. The access is offered for multiples of a 6 month period, corresponding to the periodic maintenance operations.

A support team formed by one technician, one sea-man and one head scientist will assist the user group, taking also care of installing/uninstalling operations. The user will have access to the infrastructure by boat, this service will be arranged by the operator. The data will be available to the user in delayed mode at the end of the 6 month access period.

Instruments/Sensors

The following instrumentation is installed in the mooring and will be available to the JERICO users

Sicily Channel, MPLS

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
ADCP RDI 75kHz longrange	Current Profiles Temperature	from -415 to -10 m -415 m for T	2 hours	ca. every 6 months
SBE37	Temperature Conductivity Pressure	-400 m	5 min	ca. every 6 months
SBE37	Temperature Conductivity	-80 m	30 min	ca. every 6 months

Special owner rules

Researchers accessing the installation by boats must provide an insurance statement and must bring their own safety equipment.

Whenever possible, the start and end of an access interval will be set to coincide with times scheduled for the ordinary maintenance of the installation in the interests of financial economy (e.g. limiting the costs of boat-time, etc.).

Infrastructure (short name)	Coastal Observation System for Northern and Arctic Seas (COSYNA)
Installation (short name)	Fixed Stations - Piles (COSYNA_2 PILE)
Location	North Sea
Coordinates	53° 30.994' N 8° 11.293' E, 54° 47.65' N 8° 27.083' E
Bottom depth	5 m

Legal name of organization	HZG Research Centre
Location of organization	Geesthacht, Germany
Contact	Götz Flöser, goetz.floeser@hzg.de Institute of Coastal Research/Operational Systems Helmholtz-Zentrum Geesthacht Max Planck Str. 1, D-21502 Geesthacht, Germany Phone: +49 (0) 4152 87 2345 Fax: +49 (0) 4152 87 1525
Web site address	http://www.cosyna.de and http://www.coastlab.org/

Description

COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea. It is being developed by institutes of the German Marine Research Consortium (KDM) and collaborating institutions and is operated by the HZG Research Centre. The infrastructure represents an investment of 9 M €. It is built up in two phases over 6 years:

COSYNA PILE is based on two shallow-water Wadden Sea piles. The piles are equipped with hydrographical and meteorological sensors and deliver the datasets every 10 minutes via mobile phone connection to the HZG database. The maintenance interval varies with the season: in autumn / winter, maintenance can be done once in three weeks, in spring / summer it is required to be done every five days. The piles can not resist sea ice, thus they must be removed during winter months December – February.

Service offered

HZG will give access to three wadden sea piles. The access will consist in hosting visitors for experiments and for installation of users' equipment on piles.

The support team consists of technicians and scientists who prepare the instrumentation and take care of its installation and un-installation on the piles.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
Hydrographical sensors:				
ADCP	Current velocity, direction and backscatter intensity	1 m water depth	10 minutes	10 minutes
Optical backscatter sensor	Backscatter intensity, proxy for suspended matter concentration	1 m water depth	10 minutes	10 minutes
Temperature sensor	Water temperature	1 m water depth	10 minutes	10 minutes
Acoustic Doppler velocimeter	Current velocity, direction and backscatter intensity	1 m water depth	10 minutes	10 minutes
Optode	Oxygen saturation	1 m water depth	10 minutes	10 minutes
Conductometer	Electrical conductivity	1 m water depth	10 minutes	10 minutes
Fluorometer	Chlorophyll fluorescence	1 m water depth	10 minutes	10 minutes
PAR sensor	Photosynthetically active radiation	1 m water depth	10 minutes	10 minutes
Pressure sensor	Water pressure, proxy for water depth	1 m water depth	10 minutes	10 minutes
Meteorological sensors:				
Temperature sensor	Air temperature	5 m height	10 minutes	10 minutes
Anemometer	Wind speed and direction	5 m height	10 minutes	10 minutes
Pressure sensor	Air pressure	5 m height	10 minutes	10 minutes
Pyranometer	Solar radiation power	5 m height	10 minutes	10 minutes
Precipitation sensor	Precipitation	5 m height	10 minutes	10 minutes
Hygrometer	Relative humidity	5 m height	10 minutes	10 minutes

Additional services/data

Other activities within the observatory COSYNA are linked to the FerryBox and glider activities.

Special owner rules

None

Infrastructure (short name)	NOC Coastal Observatory (COBS)	
Installation (short name)	NOC Marine Autonomous and Robotic Systems (MARS)	
Location	Based in Southampton	
Legal name of organization	Natural Environment Research Council NERC	
Location of organization	Southampton, UK	
Contact	David White, dwh@noc.ac.uk MARS Glider Manager National Oceanography Centre, Southampton European Way Southampton SO14 3ZH UK Tel +44 2380 596154	
Web site address	http://noc.ac.uk/research-at-sea/nmfss/mars	

Description

The MARS glider group provides support for and operates the NOC glider fleet for NERC funded scientific programs. In recent years, NOC glider operations have been in the north Atlantic, Mediterranean and Irish seas.

We have strong links to the other major glider groups in the UK, at UEA, SAMS and BAS, as well as the scientists at both NOC sites at Liverpool and Southampton.

We carry out trials, deployment, piloting and recovery of our own and other groups' gliders as required, as well as refurbishment, repair and modification of both Slocums and Seagliders.

The MARS glider group:

- 4 Seagliders
- 4 deep Slocum gliders
- 3 shallow Slocum gliders (general purpose)
- 1 shallow Slocum glider (turbulence probe)

Service offered

The MARS gliders are available for use in Trans National Access projects in JERICO. Where science projects welcome added value measurements using added-on sensors, small programmes can piggy-back on larger or more established programmes. The MARS glider group will liaise with PIs where this is possible.

Where trials are programmed by MARS, other trials or short missions can be accomodated.

The support team consists of the NOC engineers and scientists who regularly prepare the instrumentation and install/uninstall or deploy the gliders (four people) and process the data.

Instruments/Sensors

Instrument	Measured parameters	Depth range	Sampling frequency	Frequency of data recovery
3 x Teledyne Webb Research Slocum Electric glider (G2)	Two pumped and one non-pumped CT from Seabird, Anderaa Oxygen optode and Wetlabs triplet puck measuring Chl-a, CDOM and 650nm turbidity	0-200m	various	Data subset at user selected intervals via Iridium, full dataset after recovery.
1 x Teledyne Webb Research Slocum Electric glider (G2)	Non-pumped CT from Seabird, Rockland Scientific MicroRider turbulence probe (micro conductivity, shear and temperature up to 512Hz)	0-200m	various	Data subset at user selected intervals via Iridium, full dataset after recovery.
4 x Teledyne Webb Research Slocum Electric glider (G2)	Non-pumped CT from Seabird, Anderaa Oxygen optode and Wetlabs triplet puck measuring Chl-a, CDOM and 650nm turbidity	0-1000m	various	Data subset at user selected intervals via Iridium, full dataset after recovery.
4 x iRobot 1kA Seaglider	Non-pumped CT from Seabird, Anderaa Oxygen optode and Wetlabs triplet puck measuring Chl-a, CDOM and 700nm turbidity	0-1000m	various	Data subset at user selected intervals via Iridium.

Special owner rules

None.

Infrastructure (short name)	Coastal Observation System for Northern and Arctic Seas (COSYNA)	
Installation (short name)	Mobile Platforms - gliders (COSYNA_3 GLIDER)	
Location	North Sea	
Legal name of organization	Helmholtz-Zentrum Geesthacht, Institute of Coastal Research	
Location of organization	Geesthacht, Germany	
Contact	Lucas Merckelbach, lucas.merckelbach@hzg.de Institute of Coastal Research/Operational Systems Helmholtz-Zentrum Geesthacht Max Planck Str. 1, D-21502 Geesthacht, Germany Phone: +49 (0) 4152 87 1515 Fax: +49 (0) 4152 87 1525	
Web site address	http://www.hzg.de/institute/coastal_research/cosyna/011312/index_0011312.html	

Description

COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea. It is being developed by institutes of the German Marine Research Consortium (KDM) and collaborating institutions and is operated by the HZG Research Centre. The infrastructure represents an investment of 9 M €. It is build up in two phases over 6 years:

COSYNA GLIDER is based on 2 Slocum gliders rated at 100 m water depth. The first glider was ready for deployment by the start of 2011, where as the second glider was delivered by March 2011. Since conditions in the German Bight, as opposed to normal oceanic conditions, pose additional challenges such as strong tidal currents, high shipping intensity and large density differences, three one-month deployments were aimed at assessing the practical feasibility of flying gliders and its constraints. At the time of writing the third mission is underway, however, the preliminary conclusion is that using gliders is feasible, provided that the region of operation excludes coastal waters of 10m and less, and (the crossing of) main shipping lanes. Following the completion the third glider mission, the experience gained will be evaluated and a schedule for 2012 will be formulated.

Service offered

HZG will give access to two gliders. The access will consist in planning and performing assisted glider missions on user demand.

The support team consists of technicians and scientists who prepare the instrumentation, deploy the gliders and pre-process the data.

It is noted that deployments of gliders in the German Bight require written permission from the responsible shipping authorities (WSA Tönning). Whether permission is granted or not is beyond the control of HZG, however, HZG can assist with or take care of the application process.

The table below lists the instruments available per glider. Glider Sebastian is labelled (1), and glider Amadeus is labelled (2). The depth rating of the gliders is 100m. For North Sea conditions however, it means the whole water column can be sampled. Sample frequencies given are typical, but are user configurable (1Hz is maximum).

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
CTD (1&2)	**Conductivity, temperature, pressure**	**Full-depth range**	**0.5 Hz**	
Optical backscatter (1)	**Backscatter at 470, 532 and 660 nm**	**Full-depth range**	**Typical 0.125 Hz**	
BBFLCD (1)	**Optical backscatter (532 nm), Fluorescence and Coloured dissolved organic matter**	**Full-depth range**	**Typical 0.125 Hz**	
FLNTU (2)	**Fluorescence and turbidity**	**Full-depth range**	**Typical 0.125 Hz**	

Special owner rules

HZG requires a proposal to be submitted for each requested glider operation. The proposal will be evaluated internally. The main criteria are availability of resources for requested period, feasibility and risk assessment.

Infrastructure (short name)	National Glider facility	
Installation (short name)	National Glider facility (CETSM)	
Location	Western Mediterranean	
Legal name of organization	Institut National des Sciences de l'Univers/ Centre National de la Recherche Scientifique INSU/CNRS	
Location of organization	La Seyne sur mer, France	
Contact	Pierre Testor, testor@locean-ipsl.upmc.fr Laboratoire d'Océanographie et de Climatologie : Expérimentation et Approches Numériques (LOCEAN, ex LODYC) Institut Pierre Simon Laplace, Université Pierre et Marie Curie, aile 45-55, 4ème étage, case 100 4 Place Jussieu, 75252 Paris cedex 05, France Phone: +33 1 44 27 72 75 Fax: +33 1 44 27 38 05	
Web site address	http://www.ego-network.org	

Description
The French National Glider facility is held by DT-INSU in La Seyne sur mer. It is part of and supports a larger group so-called EGO (Everyone's Glider Observatories). This glider facility started in September 2008, and is now composed of 5 engineers and technicians operating, by the end of 2011, 14 operational gliders, 4 of them being shallow gliders rated to 200m depth maximum but ideal for operations on the shelf. The facility is fully equipped to prepare, operate and maintain gliders: - A glider ballasting tank in order to prepare the glider, - An electronic lab for battery change and maintenance - Servers and modems for communications with the gliders - The ego-network.org web server which allows the real-time display of the collected data a and containstools for piloting gliders (monitoring and mission changes) through the web, in a collaborative way The glider staff is fully trained (preparation and piloting) and is working on shift for continuous service. Among the gliders one can find the following available sensors: - CTD - Oxygen Optode - Fluorimeters (ChlA, CDOM, Phycoerythrine,) - Back scattering (from 470 to 880 nm), turbidity
Service offered
INSU can provide access to users to the DT-INSU gliders facilities, including the use of one or

more glider units (after a carefully peer-review of proposed missions – feasibility, mission definition, benefits, etc…)

The proposed services can consist of:

- Preparation of a fleet of gliders (1 to 3 gliders) and its sensors for a specific task and for the area to operate, including new sensors to integrate and test

- Logistics from the operator facilities to the operation site and return as well as launch/recovery operations of the gliders, if the operation site is in the vicinity of DT-INSU gliders facilities (NW Mediterranean, otherwise only assistance will be provided).

- Remote control and programming of the gliders

- Data recovery and delivery to the user.

As long as the iridium link between the gliders and land make it possible, eal-time data will be available in real-time. There is a dedicated team composed of technicians who prepare and operate the gliders, program and supervise the cruise, format and distribute the data at the end of the cruise.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Frequency of data recovery
glider1	**T, S, O2+other biogeochemical sensors**	**0-200m or 0-1000m (min of ~50m waterdepth)**	**4-8s**	**~5h**
glider2	**T, S, O2+other biogeochemical sensors**	**0-200m or 0-1000m (min of ~50m waterdepth)**	**4-8s**	**~5h**
glider3	**T, S, O2+other biogeochemical sensors**	**0-200m or 0-1000m (min of ~50m waterdepth)**	**4-8s**	**~5h**

Special owner rules

Carefully peer-review of proposed missions – study area, feasibility, mission definition, benefits.

Infrastructure (short name)	OGS-North Adriatic Coastal Observatory (OGS-NACObs).
Installation (short name)	OGS-Oceanographic Calibration Centre (OGS-CTO).
Location	Mediterranean Sea, Adriatic Sea, Trieste.
Legal name of organization	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS.
Location of organization	Trieste, Italy.
Contact	Rajesh Nair, rnair@ogs.trieste.it Department of Oceanography Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS Borgo Grotta Gigante 42/C, 34010 Sgonico (TS), Italy Tel. +39 040 2140323 - Fax. +39 040 2140266
Web site address	http://nettuno.ogs.trieste.it/jungo/cto/index_eng.html

Description
The OGS-Oceanographic Calibration Centre (OGS-CTO) is the oceanographic testing and calibration facility of the Department of Oceanography of the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS). It provides the Department with the scientific and technical infrastructure necessary for making and guaranteeing high-quality observations of the marine environment in a way that continuously meets recognized international standards of excellence. A critical element of the services offered is the ability to calibrate and maintain sea-going instrumentation efficiently. The facility is run applying relevant international guidelines and protocols as much as practically possible in order to assure conformity or, at least, compatibility, with the regulatory standards governing this kind of activity worldwide. The OGS-CTO is supervised and manned by a small team of experienced technicians, the Department of Oceanography's Calibrations & Testing Operations Group (CTO Group) headed by Mr. Nevio Medeot, which also oversees the facility's scientific and technological development. Currently, the OGS-CTO can provide high-calibre temperature and conductivity calibrations able to meet the demanding oceanographic measurement specifications for these parameters. It is also capable of performing functional tests, evaluations and validations of instrumentation used for measuring other commonly monitored parameters like turbidity, pH, etc.
Service/s offered
Marine temperature and conductivity sensor calibrations (with the support of OGS-CTO personnel). *Kindly note that the calibration of one pair of temperature and conductivity sensors normally takes about five working days*.

Instruments/Sensors

Current capabilities for temperature and conductivity calibrations:

Table 1. The laboratory instrumentation and reference material constituting the calibration set-up for **conductivity**.

Test instrumentation	Specifications
Hart 7052 Seawater Calibration Bath	Range: -10.00 - 110.00°C Stability: >±0.001°C
Guildline 5010 Seawater Calibration Bath	Range: -9.90 - 65.00°C Stability: ±0.002°C over 24 hours
Hart 1590 Precision Digital Thermometerwith Metal-sheath SPRT (Rosemount 162CE / Hart 5699)	Range: 0.00 – 30.00°C Accuracy: > ±0.0015°C
SBE41 CP-OGS Conductivity & Temperature Monitor	Range: 0.00 – 60.00 mS/cm Accuracy: > ±0.003 mS/cm
Laboratory Salinometer (Guildline Autosal 8400B)	Range: 0.005 - 42 psu salinity Accuracy: > ±0.002 PSU over 24 hours
Portable Salinometer (Guildline model 8410)	Range: 0.004 - 76 mS/cm Accuracy: ±0.003 PSU

Reference Material
IAPSO Standard Seawater

Table 2. The laboratory instrumentation and reference material constituting the calibration set-up for **temperature**.

Test instrumentation	Specifications
Hart 1590 Precision Digital Thermometer with Metal-sheath SPRT (Rosemount 162CE / Hart 5699)	Range: 0.00 – 30.00°C Accuracy: > ±0.0015°C
SBE41 CP-OGS Conductivity & Temperature Monitor	Range: 0.00 – 30.00°C Accuracy: > ±0.003°C
Hart 7312TPW Maintenance Bath	Range: -5 – 110°C Stability: ±0.001°C at 0°C
Hart 9230 Ga Cell Maintenance Bath	Range: 15 – 35°C Stability: ±0.02 °C

Reference Material
Two Jarrett B13 and one Hart 5901, TPW Cells Hart 5943,Melting Point of Gallium Cell Standard resistors(L&N 4030B / Guildline 9330 series)

Uncertainty:

Temperature:
Expanded Measurement Uncertainty (95% level of confidence; k = 2) for reference temperature: 0.0030 °C (ITS-90).

Conductivity:
Expanded Measurement Uncertainty (95% level of confidence; k = 2) for reference conductivity: 0.00034 Siemens/m (0.0034 mS/cm).

Special owner rules

- The responsibility of the OGS-CTO shall be limited to the correct and scrupulous execution of the requested service/s, including the supervision of consigned sensors/instrumentation when they are on its premises. The OGS-CTO shall not be held liable for any other kind of responsibility relating to defects, faults or malfunctions of the delivered sensors/instrumentation, including those that may arise from packing/unpacking, handling by unauthorized persons and shipping operations.

- The OGS-CTO shall not be held liable for any damage that may occur to consigned sensors/instrumentation during the execution of the requested service/s resulting from pre-existing defects, faults or malfunctions of the same (for example, corroded connectors, defective o-rings, improper maintenance, etc.). Any extraordinary repair or maintenance requirement arising in the performance of the specified service/s shall be communicated immediately to the TNA Beneficiary; all such requirements will be itemized and costed separately, and action will be undertaken only upon receiving express permission to proceed from the Beneficiary.

- In case of unexpected or unpredictable events that could render temporarily impossible the completion of the services requested in the assigned time-frame, the resulting delay will be communicated to the TNA Beneficiary, without this being the reason or motive for claims for damages or any other similar initiatives on the part of said Beneficiary.

Infrastructure (short name)	CNR-Marine Platforms and Laboratories (CNR-MPL)
Installation (short name)	CNR Calibration facility Trieste (MPLCAL6)
Locations	Mediterranean Sea, Trieste (Northern Adriatic)
Legal name of organization	Consiglio Nazionale delle Ricerche CNR
Location of organization	Rome, Italy

Contact	Stefano Cozzi, stefano.cozzi@ts.ismar.cnr.it Institute of Marine Sciences, National Research Council (ISMAR CNR) Trieste Branch Viale Romolo Gessi 2, 34123 Trieste, Italy Phone: +39 040 305312 - Fax: +39 040 308941
Web site address	

Description

The Laboratory for chemical analysis of CNR-ISMAR in Trieste (MPLCAL6) has been involved for at least three decades in the study of the biogeochemical cycles of the major elements (carbon, nitrogen, phosphorus and silicon) in the marine environment. This research activity has been carried out in the Mediterranean Sea and in Polar regions in the framework of several national and international research projects. An important part of this research is based on the determination of dissolved oxygen (DO), dissolved inorganic nutrients (NO3, NO2, NH4, SiO2 and PO4), total/dissolved organic carbon (TOC/DOC) and inorganic carbon chemistry parameters (pH_T, total alkalinity, A_T).

Laboratory methods currently available for all the parameters are listed as follows. All the methods are set up for high precision – low blank analyses in order to be suitable for oceanographic purposes. Total alkalinity and pH measures reach the high standard internationally required to calculate and study all the inorganic carbon chemistry parameters (TCO_2, pCO_2, Ω_{Ar}, Ω_{Ca},..). These measurements have been already applied either in eutrophic coastal zones and oligotrophic offshore waters. Ultrapure laboratory water is available for these analyses.

DO: automated potentiometric Winkler titration;
NO3, NO2, NH4, SiO2, PO4: spectrophotometric manual or flow-segmented autoanalyzer methods;
TOC/DOC: automated high temperature catalytic oxidation method with NDIR detection;
pH: m-cresol purple spectrophotometric method; high precision potentiometric method
A_T: open cell potentiometric titration.

Service offered

The laboratory of chemical oceanography in Trieste (MPLCAL6) is accessible for Jerico users for the above mentioned laboratory analyses. The research activity will be carried out by the assistance team of the institute, or by external users under the assistance of this team. Experimental results of the laboratory activity may be also remotely accessed on user demand.

Laboratory work can be addressed to validation and assessment of the performances and long term reliability of chemical sensors, by their comparison with analytical laboratory methods applied

to discrete seawater samples. The comparison between sensor performance and reference chemical methods can be done during in situ experiments, using the facilities of our institute available in the Gulf of Trieste, as well as during microcosm incubations in controlled ambient conditions.

Instruments/Sensors

Parameter	Method	Instruments
DO	Winkler titration	Metrohm 798 Titrino
Nutrients	Spectrophotometry	manual analysis, Technicon autoanalyzer, OI-Analytical autoanalyzer
TOC/DOC	HTCO method	Shimadzu TOC V CSH analyzer
pH	Potentiometry Spectrophotometry	Metrohm 809 Titrando Varian Cary-50 Spectrophotometer
A_T	Potentiometric titration	Metrohm 809 Titrando

Special owner rules

During access to the laboratory for experimental activities, the ground rules of CNR for external visitors will be applied.

Infrastructure (short name)	CNR-Marine Platforms and Laboratories (CNR-MPL)
Installation (short name)	CNR Calibration facility Capo Granitola (MPLCAL7)
Locations	Mediterranean Sea, Sicily (Strait of Sicily)
Legal name of organization	Consiglio Nazionale delle Ricerche (CNR)
Location of organization	Rome, Italy
Contact	Mario Sprovieri, mario.sprovieri@iamc.cnr.it Institute for Coastal Marine Environment, National Research Council (IAMC-CNR) Via del Mare, 3 Torretta Granitola 91021 Fraz. Campobello di Mazara, TP, Italy Phone: +39 0924 40670 - Fax: +39 0924 40445
Web site address	http://www.iamc.cnr.it

Description

The laboratory for geochemical analyses of the CNR-IAMC of Capo Granitola (Sicily) is directly and intensively involved in the study of biogeochemical cycles related to major (nitrogen, phosphorus and silicon) and trace (Cd, Pb, Co, Ni, Cu, Ag, Mo, Al, Mn, Fe) elements in the marine environment. The research activity makes part of a number of national and international research projects (JERICO, VECTOR, SESAME, PERSEUS, COST Action, ITN programs, etc.). A significant part of the analytical and research activities is focused on the determination of dissolved and particulate inorganic and organic nutrients (NO_3, NO_2, NH_4, SiO_2 and PO_4), particulate organic carbon (TOC), trace elements (dissolved and particulate phases), carbon (dissolved an particulate) and oxygen isotopes in seawater. Calibration of fluorescence probes for chlorophyll estimation is also possible at the CNR-IAMC of Capo Granitola labs, by Liquid chromatography equipped with spettrofluorimetric detectors

Laboratory methods currently available for these parameters are listed as follows. Lab facilities for handling samples and preparation according to international reference procedures are available. All analytical methods are set for high precision – low blank analyses to be suitable for oceanographic purposes. These measurements have already been applied both in eutrophic coastal zones and oligotrophic offshore waters. Ultrapure laboratory water is available to be used for these analyses.

NO_3, NO_2, NH_4, SiO_2, PO_4: flow-segmented autoanalyzer method with Brän–Luebbe autoanalyzer (QUAATTRO).
TOC: Element analyser (ThermoElectron)
Trace elements: HR-ICP-MS (ThermoElectron)
$\delta^{13}C$, $\delta^{18}O$: GasBenchII and Delta Plus XP (ThermoElectron)
High performance liquid chromatography (HPLC) equipped with spectrofluorimetric detector and UV/VIS detector.

Service offered

The laboratory of geochemistry in Sicily (MPLCAL6) is available for validation and assessment of long term performances of chemical sensors by application analytical methods to discrete

seawater samples. The comparison between sensor performance and reference chemical methods can be done during experiments in situ, as well as during microcosm incubation in controlled ambient conditions.

The service described above can be provided by a dedicated team or directly accessed by the JERICO user with the assistance of this team. The assistance team is formed by one technician and one head scientist for each laboratory. The results will be directly accessible to the user in case of direct access, or remotely accessible in case the operations are conducted by the operator on user demand.

Instruments/Sensors

Parameter	Method	Instruments
Chlorophyll	Liquid-chromatography	HPLC- with (UV-VIS, and Spectrofluorimetric detectors
Nutrients	Spectrophotometry	Brän–Luebbe autoanalyzer (QUAATTRO)
TOC	Gas-chromatography	EA-ThermoElectron
Trace elements	Mass spectrometry	HR-ICP-MS
$\delta^{13}C$,$\delta^{18}O$	Mass spectrometry	GasBenchII, Delta Plus XP

Special owner rules

During access to the laboratory for experimental activities, the ground rules of CNR for external visitors will be applied.