



DELIVERABLE TITLE:

JERICO-S3 D8.1 - Description of Facilities in Transnational Access provision

DELIVERABLE NUMBER: D8.1

WORK PACKAGE N° and NAME: WP8 Transnational Access

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Due date // Submission date: 31.10.2020 // 27.01.2021

Nature: R

(R = Report, P = Prototype, D = Demonstrator, O = Other)

Dissemination level: PU

PU = Public, PP = Restricted to other programme participants (including the Commission Services), RE = Restricted to a group specified by the consortium (including the Commission Services), CO = Confidential, only for members of the consortium (including the Commission Services)

GRANT N°: 871153

PROJECT ACRONYME : JERICO-S3

PROJECT NAME : Joint European Research Infrastructure for Coastal Observatories - Science, services, sustainability

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DOCUMENT TECHNICAL DESCRIPTION

Document ID	JERICO-S3-WP8-D8.1-31.10.2020-V2.3
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JERICO-S3 DELIVERABLE


Joint European Research Infrastructure network for Coastal Observatory
Science, Services, Sustainability

DELIVERABLE WP and full title	JERICO-S3 D8.1 Description of Facilities in Transnational Access provision
Description	Description of facilities proposed for transnational access by the JERICO S3 Consortium
Lead beneficiary	Marine Institute (MI)
Lead Authors	Paul Gaughan (MI)
Contributors	Alan Berry
Submitted by	Paul Gaughan

REVISION HISTORY

Revision	Date	Modification	Author
V1.0	23/10/20	Draft Version	Paul Gaughan
V2.1	5/11/20	Updated information from Access Providers	Paul Gaughan
V2.2	30/11/20	Final Edits and updates.	Paul Gaughan
V2.3	27/01/21	Final review and formatting	Laurent Delauney

APPROVALS

	Name	Organisation	Date	Visa
Coordinator	Delauney Laurent	Ifremer	27/01/21	
WP Leaders	Alan Berry	MI	01/12/20	X

Diffusion list

Consortium beneficiaries	Third parties	Associated Partners	other

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1. EXECUTIVE SUMMARY

This report relates to WP8 - Transnational Access to Coastal Observatories. During its lifetime JERICO-S3 will offer co-ordinated 'free of charge' Transnational Access to researchers or research teams from academia and industry to original coastal infrastructures described in this report. Users can apply for access by submitting (in writing) a description of the work that they wish to carry out at one of three open Calls planned by the JERICO-S3 Consortium in 2020, 2021 and 2022. A Selection Panel formed by independent experts will evaluate and select the access projects. The catalogue of infrastructures participating in the Transnational Access activities is described as well as the associated online tool developed to inform and assist potential users on the access opportunities most suitable to maximise the quality and impact of their research activities.

2. INTRODUCTION

As part of the Transnational Access (TA) activity implemented in WP8, JERICO-S3 offers opportunities to researchers or research teams from academy and industry to access original coastal infrastructures for measurement campaigns and instrument testing.

Between June 2020 and January 2024 will offer more than 8800 days of Transnational Access (TA) to 45 different integrated marine coastal observation facilities located at 21 JERICO-RI partners throughout Europe.

These opportunities are expected to help building long-term collaborations between users and JERICO-S3 partners, and to promote innovation and transfer of know-how in the coastal marine sector. Access will be provided 'free of charge' following three open calls, once per year from 2020 to 2021, and the evaluation of proposals by an independent panel of expert. A user or a user group will access an infrastructure to test an instrument or collect data according to either of the following modalities of access:

1. **Remote:** The measuring system is implemented by the operator of the installation and the presence of the user group is not required.
2. **In person/hands-on:** the presence of the user group is required/recommended during the whole operation period;
3. **Partially remote:** the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Funds for travel and subsistence costs of user groups, as well as shipping of their equipment will be negotiated on a case by case. A dedicated section has been developed on the JERICO-S3 website, <http://www.jerico-ri.eu/>, to promote the TA activity. This includes an on-line catalogue describing the TA offer to help potential users evaluating, among the available infrastructures, those suitable for the purposes of their research.

3. TRANSNATIONAL ACCESS SERVICE CATALOGUE

3.1. Introduction

The catalogue of TA service is made by two chapters, one including proper observing systems, another including supporting facilities and special equipment (Table 1). Use of supporting facilities and special equipment is ancillary to applications for using one or more observing systems.

It includes 35 facilities: 30 observing systems in Chapter 1 and 5 supporting facilities and special equipment in Chapter 2.

Organisation	Chapter 1 (Observing systems)	Chapter 2 (Supporting facilities and special equipment)
	Infrastructure / Facility name	Infrastructure / Facility name
IFREMER	COAST-HF/Marel	METLAB
IFREMER	COAST-HF/Scenes	
IFREMER	COAST-HF/SMile	
AZTI	EusKOOS/Donostia Buoy	
AZTI	SEADRONE	
CEFAS	SmartBuoys	
CEFAS	FerryBox	
CNR	SICO/MPLS	
CNR	S1-GB	
CNR	ACQUA ALTA	
CNR	CoCM	
CNRS	EOL	SPI H&S
CNRS	GNF/DT_INSU	
CNRS	SSL@MM	
FMI	Uto	
FMI	Baltic Sea Glider	
HCMR	POSEIDON Multi Platform	POSEIDON Cal Lab
AWI	COSYNA/UNH	
AWI	COSYNA/AWIPEV_UNH	
HZG	COSYNA/SFB	
HZG	COSYNA/GL	
HZG	COSYNA/FB	
HZG	COSYNA/MUO	
IH	MONIZEE_MPB	
MI	SmartBay/Observatory	
MI	SmartBay/Databuoy	
MI	SmartBay/Glider	
NIVA	NorFerry/NorSoop	

NIVA	NorFerry/NorSoop	
OGS	MAMBO/Miramare	
PLOCAN	PLOCAN Multi Platform	
RBINS	MOW1-WO5-WO8	
SMHI	FerryBox	
SOCIB	GLIDER	
SYKE	ALG@LINE	MRC-LAB
Taltech	CGoFAOS	
Taltech	Glider Mia +profiler	
UPC	OBSEA	
VLIZ	Coastal Observatory	

Table 1: Lists of the 43 pan-European facilities offered to users through the TA program of JERICO-S3 (second and third column for Chapter 1 and 2 respectively). The facility providers are indicated in the first column.

With observing systems, we mean advanced technological observational platforms equipped with sensors for measurements of physical, chemical and/or biological variables. They are located/used in the coastal and shallow seas around Europe and belongs to the following classes:


- 1) Fixed platforms:** platforms moored in a fixed position, including buoys, piles, beacon, etc.
- 2) Coastal cabled observatories:** fixed platforms connected to land via electrical or electro-optical cables.
- 3) FerryBoxes:** very specialised flow-through systems in which water is pumped from a subsurface inlet into the measuring circuit of multiple sensors. They are installed on commercial ships sailing regular routes.
- 4) Gliders:** autonomous underwater vehicles using buoyancy-based propulsion to move across the water column. Besides the vehicle, a glider facility includes also permanent land-based laboratories to support the operation.
- 5) MultiPlatforms Coastal observation Infrastructures** that offer a combination of classes 1 to 4.

Transnational access will support a wide range of users by giving free of charge access to high-quality mature infrastructures and support services at unique multi-disciplinary sites consisting of a mix of gliders, fixed platforms, ferryboxes, cabled observatories, HF radar, benthic stations, bio-sensors and metrology services. The users will be able to carry out first-class experiments on the multi-disciplinary, multi-platform coastal observing systems thus maximising impact for science, environmental managers, industries and other relevant stakeholders.

3.2. Gliders and AUVs

Gliders and AUVs					
Access provider	Country	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
AZTI	ES	EUSKOOS	SEADRONE	Day	360
CNRS	FR	GNF	DT_INSU	Day	120
FMI	FI	Baltic Sea Glider	FMI Glider	Day	12
HZG	DE	COSYNA	GL	30 days	2
MI	IE	SmartBay	Glider	Day	12
SOCIB	ES	SOCIB	GLIDER	Day	88
TALTECH	EE	Glider Mia +profiler	Glider Mia +profiler	Day	9

3.2.1. SEADRONE

Infrastructure (short name)	SEADRONE (SEADRONE)	
Installation (short name)	SEADRONE (SEASDRONE)	
Location	Location: Pasaia, Gipuzkoa (SPAIN)	
Coordinates/Routes	43.3219, -1.9319	
Legal name of organisation	FUNDACION AZTI - AZTI FUNDAZIOA	
Country	Spain	
Website: www.azti.es	www.azti.es	

Description:

Autonomous surface vessel equipped with echo sounder and a weather station for pelagic monitoring. Length: 190cm; Beam: 117cm; Draft: 50cm; Weight: 50kg; Electric propulsion (Speed:3-4 knots). Endurance: >3 months (solar panels). Services currently offered: Acoustic field surveys.

Instruments/Sensors

Autonomous surface vessel equipped with echo sounder and a weather station for pelagic monitoring

Access Provided


Modality of access under this proposal:MoA2. UA:week.Modality used to declare access costs:TA-AC Support offered under this proposal:

Service and support

Scientists would be invited to use the infrastructure for field surveys with assistance for design, operation and data delivery.

Special Rules n/a

3.2.2. GNF

	CNRS-INSU Glider National Facility (GNF)	
Installation (short name)	CNRS-INSU Glider National Facility (GNF)	
Location	La Seyne sur mer, France	
Coordinates/Routes	43.106°N - 5.8833°E	
Legal name of organisation	Centre National de la Recherche Scientifique (CNRS)	
Country	France	
Contact	Jeanne Melkonian CNRS DT INSU Z.P. Brégaillon C.S. 20330 83507 LA SEYNE SUR MER CEDEX Tel: (+33) (0)4 94 30 44 65 Email : jeanne.melkonian@cnrs.fr	

Description:

Autonomous surface vessel equipped with echo sounder and a weather station for pelagic monitoring. Length: 190cm; Beam: 117cm; Draft: 50cm; Weight: 50kg; Electric propulsion (Speed:3-4 knots). Endurance: >3 months (solar panels). Services currently offered: Acoustic field surveys.


Instruments/Sensors

Access Provided

Service and support

Special Rules

3.2.3. *UIVELO*

Infrastructure (short name)	FMI Baltic Sea Glider (Uivelo)	 FINNISH METEOROLOGICAL INSTITUTE
Installation (short name)	FMI Baltic Sea Glider (FMI Baltic Sea Glider)	
Location	Northern Baltic Sea (within 100 km from the Finnish coast - possibility to use also other parts of the Baltic Sea if a local ship for deployment and recovery is available)	
Coordinates/Routes		
Bottom depth	200m	
Legal name of organisation	Finnish Meteorological Institute	
Country	Finland	
Contact	https://www.finmari-infrastructure.fi/autonomous-platforms/gliders/	

Description

The FMI glider is equipped with CTD, oxygen optode and fluorometer (chlorophyll, turbidity and CDOM). The glider also includes a propeller for improved operability. The maximum operating depth is 200m.

Instruments/Sensors

Access provided

Days offered for TA: 120 days during the duration of the project.


Service & support

FMI provides TA for Glider "Uivelo" for maximum one month year. The support include battery, data transmission and sensor calibration costs, preparing the glider for the mission, deployment and recovery, remote piloting and near-realtime data.

Special rules

N/a

3.2.4. COSNYA GLIDER

Infrastructure (short name)	Coastal Observing System for Northern and Arctic Seas (COSYNA)	 Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research
Installation (short name)	COSYNA glider (COSYNA_GL)	
Location	German Bight, North Sea	
Coordinates/Routes	54.185°N - 8.9°E	
Bottom depth	xxx	
Legal name of organisation	Helmholtz-Zentrum Geesthacht (HZG)	
Country	Germany	
Contact	Klas Ove Möller Institute of Coastal Research / Operational Systems Helmholtz-Zentrum Geesthacht Max-Planck-Strasse 1 21502 Geesthacht Germany Phone: +49 (0) 4152 87-2371 email: klas.moeller@hzg.de	

Description

COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea composed by fixed platforms, FerryBoxes, gliders and HF-radar systems. 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 was build up since 2007 and is fully operational since 2012.

COSYNA_GL is one of the 2 gliders of the system (TWR Slocum Electric, 100 m) equipped with CTD, Wetlabs ECO puck FLNTU (fluorescence and turbidity) and CDOM fluorescence.

Web site address: <http://www.cosyna.de>

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation /Depth	Sampling	Frequency of data transmission
CTD	Conductivity, temperature, depth	0-100 m Depth	0.5 Hz	Every 3-4 hours
FLNTU	Fluorescence, turbidity	0-100 m Depth	1 Hz	Every 3-4 hours
BB3SLO	Backscatter 440, 532, 680 nm	0-100 m Depth	1 Hz	Every 3-4 Hours

FLBB CD	Fluorescence, backscatter (600nm) and CDOM	0-100 m Depth	1 Hz	Every 3-4 Hours
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Access provided

- **In person/hands-on:** the presence of the user group is required/recommended during the whole operation,
- **Partially remote:** the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Unit of access (UA): month (minimum duration).

HZG provides access to one of the two gliders of the fleet for autonomous operation at sea. Access to the HZG glider by a user group is treated as a concession granted to use the infrastructure (one glider, prior contact to HZG required to assure piloting and operation capabilities) in a dedicated experiment to collect specific data following the implementation of an automated measurement programme agreed between the user group and HZG.


Service & support

A support team of technicians and scientists of HZG will prepare the instrumentation; support operations at sea, including glider deployment; support in processing the data.

Special rules

To be verified with the facility provider.

3.2.5. SMARTGLIDER

Infrastructure (short name)	Smartbay (SMARTGLIDER)	
Installation (short name)	SMARTGLIDER (SMARTGLIDER)	
Location	Location: Spiddal, Galway, Ireland (West Coast)	
Coordinates/Routes	53.22730°N - 9.26620°W	
Bottom depth	100	
Legal name of organisation	Marine Institute	
Country	Ireland	
Contact	conall.omalley@marine.ie	

Description:

The Smartbay Glider is a Slocum G1 Electric Glider capable of operating to a maximum depth of 1000m. The glider is used to efficiently collect oceanographic data. All data is transferred to the MI via Iridium communications.

Instruments/Sensors

Instruments include CTD, Optical DO2, Fluorescence and Turbidity.

Access Provided

Modality used to declare access costs: TA-UC. Typical deployments will range from 7-14 Days

Service and support

Services currently offered: Capable of collecting data to a depth of 1000m over a period of 7 days. Instruments include CTD, Optical DO2, Fluorescence and Turbidity. Support offered under this proposal: Dedicated operational team providing bench testing, deployment, operations and maintenance, recovery of the sensor/equipment.

Special Rules

n/a

3.2.6. SOCIB Glider Facility

Infrastructure (short name)	Balearic Islands Coastal Observing and Forecasting System (SOCIB)	 Balearic Islands Coastal Observing and Forecasting System
Installation (short name)	SOCIB glider facility (SOCIB-GF)	
Location	Mallorca, Balearic Islands, Spain, Mediterranean Sea	
Coordinates/Routes	39.6665°N - 2.5809°E	
Bottom depth	0	
Legal name of organisation	Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB)	
Country	Spain	
Contact	glider.access@socib.es	
Joaquim Tintoré Subirana SOCIB (Director) Parc Bit, Naorte, Block A, 2 ^o Floor, Door 3; 07121, Palma, SPAIN 00 34 971 43 98 21 jtintore@socib.es		Albert Miralles Brunet SOCIB (Glider Engineer) C/Miquel Marquès 21, 07190; Esporles, SPAIN 00 34 971 61 19 07 mtorner@socib.es

Description:

The SOCIB Glider Facility (SOCIB-GF) is a key component of SOCIB, a marine research infrastructure that implements and brings state of the art multi-platform systems and technology to monitor and sustain high-resolution observations in coastal and open ocean regions. Glider activities in the Balearic Sea started in 2006 under IMEDEA projects, and the SOCIB-GF is fully active since 2012, with an important contribution during the JERICO-NEXT project (2015-2019). It has accomplished more than 115 missions including 2.802 days in water, 31.505 nm navigated and 100.937 vertical profiles collected. The SOCIB-GF team is composed of 2 full-time glider technicians, 2 part-time field-technicians (for sea operations), 2 part-time data engineers (for glider data management), 1 part-time TA access scientist, and 1 part-time experienced scientist. An intense and fruitful collaboration with IMEDEA (CSIC-UIB) team has also been established since the origin of glider operations.

The fleet in 2020 consists of 6 Slocum gliders (2 G2 and 4 G3 versions) and 2 iRobot Seaglidors (2 KA), equipped with a suite of sensors able to collect both physical (temperature and conductivity) and biogeochemical observations (chlorophyll fluorescence, oxygen, CDOM, PAR, backscatter at 700 nm and turbidity) at high spatial resolutions (~ 2 km). The

SOCIB-GF installations include a pressure chamber (1000 m), a ballasting tank as well as a lab and office space. It also has access to other SOCIB facilities such as 1) ETD (Engineering and Technology Development), 2) Data Center (including data management, public repository, on-line web-based platform tracker -for mission monitoring- and development of tools such as the glider processing toolbox (*Troupin et al.*, *Methods in Oceanog.*, 2015, – freely available scripts available at https://github.com/socib/glider_toolbox) and 3) a harbour warehouse. Besides, the SOCIB-GF uses for the glider deployments and recoveries 2 research vessels: 1) Hurricane Zodiac 9.2 m RIB, and 2) SOCIB-R/V, a 24 m coastal catamaran.

More information about SOCIB, the SOCIB-GF, glider missions and observations can be found in:

<http://www.socib.eu/> (main)

<http://www.socib.eu/?seccion=observingFacilities&facility=glider>

<http://www.socib.eu/?seccion=multimedia>

<http://apps.socib.es/dapp/> (on-line mission tracker)

<http://thredds.socib.es/thredds/catalog/auv/glider/catalog.html> (glider data public repository)

Instruments/Sensors

Sensor	Ocean glider type	Measured Parameters	Glider depth range	Sampling ¹	Real time subset data recovery ²
GPCTD (pumped)	G2+G3	Conductivity (S/m), Temperature (°C), and Depth (m)	0 -1000 m	1/4 Hz	8hrs
CTD (unpumped)	KA	Conductivity (S/m), Temperature (°C), and Depth (m)	0 -1000 m	1/4 Hz	8hrs
OPTODE (AADI)	KA + G2 +G3	Oxygen (μmol/l) and saturation (%)	0 -1000 m	1/4 Hz	8hrs

FLNTU Eco-puck (Wetlabs Eco-puck)	G2+KA	Chlorophyll fluorescence ($\mu\text{g/l}$), Turbidity (NTU)	0 -1000 m	1/4 Hz	8hrs
ECO triplet (Wetlabs)	G3	Chlorophyll fluorescence, FDOM fluorescence (ppt) and red backscatter (nm)	0 -1000 m	1/4 Hz	8hrs
PAR	G2 + G3	Photosynthetic ly Active Radiation Sensor	0 - 1000 m	1/4 Hz	8hrs

The ocean gliders have been equipped with a suit of sensors as listed in the table below:
Sampling¹: max. freq. This param. is configurable.

Real time subset data recovery²: This param. is configurable. Full dataset at end of the mission.

Typical sensors, sampling rates and surfacing times -when data are transmitted – are:

The SOCIB gliders are configured with a default sampling strategy defined to balance efficient and cost-effective scientific-data collection, near real-time transmission (NRT Tx), and quality control. That is an adjustable decimation of 60 to 120 seconds:

- CTD: $f_{\text{SAMPLING}} = 1/4 \text{ Hz}$; depth-range=[full water column]
- OXY: $f_{\text{SAMPLING}} = 1/4 \text{ Hz}$; depth-range=[full water column]
- FLNTU: 2 strategies:
 - $f_{\text{SAMPLING}} = 1/8 \text{ Hz}$; depth-range=[0- 150m]
 - $f_{\text{SAMPLING}} = 1/16 \text{ Hz}$; depth-range=[150- 300m]
- ECO triplet: 2 strategies:
 - $f_{\text{SAMPLING}} = 1/8 \text{ Hz}$; depth-range=[0- 150m]
 - $f_{\text{SAMPLING}} = 1/16 \text{ Hz}$; depth-range=[150- 300m]
- PAR: $f_{\text{SAMPLING}} = 1/8 \text{ Hz}$; depth-range=[0- 300m]

Similarly, the SOCIB communication surface strategy is the following:

- Surface when Waypoints are reached (NRT Tx.)
- Surface for periodical report at UTC 4am, 12am, and 20pm (NRT Tx.)

Finally, the standard NRT Tx strategy, concerning the science data only, implies the transmission of the first physical (CTD) and biogeochemical (Oxygen, Chlorophyll fluorescence, FDOM fluorescence, Turbidity and backscatter at 700 nm) profile (with decimation) stored after the previous surface. This approach is only indicative of the SOCIB glider endurance-line between Mallorca Island and Denia. The proposed strategies depend on the nature of the mission and the user's needs.

Access Provided

- **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 user's equipment.
- **In person/hands-on:** the presence of the user group is required/recommended during the whole operation period.

Unit of access (UA): day.

SOCIB provides access to one or more gliders of the fleet for autonomous operation at sea. Access to the SOCIB-GF by a user group is treated as a concession granted to use the infrastructure (one or several gliders, prior contact to SOCIB required to assure piloting and operation capabilities) in a dedicated experiment to collect specific data following the implementation of an automated measurement programme agreed between the user group and SOCIB.

Service and support

The glider team at SOCIB will support the potential users at any stage in proposal development. SOCIB will provide access to a number of specific complementary services:

- 1) access to glider platforms prepared and ready for operation in line with the highest international standards;
- 2) qualified personnel for the management of the gliders (platforms and sensors), including logistics for deployment and recovery;
- 3) a 24/7 operational system to pilot the gliders at sea;
- 4) access to a collaborative piloting system;
- 5) access to a collaborative Data Management system;
- 6) quasi Real Time (usually less than 8 hours) reception of data and visualization system;
- 7) a SOCIB standard post mission glider report;
- 8) Near Real-Time and Delayed-Time data in Netcdf format.
- 9) access to scientific analysis collaborative team.


Special Rules

All proposals will undergo careful peer-review regarding study area, feasibility, mission definition, benefits

3.3. Multiplatform Facilities

Multi Platform Facilities					
Access provider	Country	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
HCMR	GR	POSEIDON	POSEIDON	6 months	1
PLOCAN	ES	PLOCAN	PLOCAN	Day	40
VLIZ	BE	VLIZ Coastal Observatory	VLIZ Coastal Observatory	Day	160

3.3.1. POSEIDON

Infrastructure (short name)	POSEIDON Monitoring, Forecasting and Information System for the Greek Seas (POSEIDON) (POSEIDON)	
Installation (short name)	E1-M3A Buoy (E1-M3A), Heraklion Coastal Buoy (HCB), Poseidon Calibration Lab (PCL), Poseidon Ferrybox (PFB), Poseidon Glider (PG), Saronikos buoy (SB)	
Location	Greek Seas	
Coordinates/Routes	39.727°N - 25.135°E	
Bottom depth	0-1450 m	
Legal name of organisation	Hellenic Centre for Marine Research (HCMR)	
Country	Greece	
Contact		
Petihakis George	Leonidas Perivoliotis	
Hellenic Centre for Marine Research	Institute of Oceanography	
46km Athens-Sounio Ave.	PO Box 712 Anavyssos, Attica	
GR-190 13, Greece	Tel: +30-22910 76400	
Fax:+30-22910 76323	http://www.poseidon.hcmr.gr	

Description:

POSEIDON is an operational marine monitoring, forecasting and information system for the Greek Seas. The observing component is a distributed infrastructure all over the Greek Seas including three coastal buoys (Saronikos buoy-SB, Heraklion Coastal Buoy-HCB and E1M3A buoy-E1M3A) and one Ferrybox (PFB). A calibration laboratory is supporting the observing activities. The E1-M3A buoy, equipped with meteo, T, C/S, O₂, fluorescence, wave sensors and current meter down to 100m in depth, as well as T, C/S down to 1000m is located in the coastal area in the Southern Aegean (Cretan Sea), is representative of oligotrophic conditions. Although coastal the depth of the water column allows deeper observations.

Instruments/Sensors

Access Provided

Unit of access (UA): 6 months

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).


Service and support

POSEIDON is both a geographically and scientifically distributed infrastructure in Greek seas offering end-to-end services both to science and to society. Complementary nodes both in off shore and coastal environments integrated into a unique system. From these nodes, the Coastal platforms, SB, HCB, E1-M3A and the FerryBox are open for access to users to host sensors for recording a number of parameters that do not belong to the main POSEIDON portfolio. The nodes have been designed to support the open access to different types of sensors by providing also their data in real time in most of the cases. The access is offered for one of the nodes of the network or for any combination of different nodes. Access to SB, HCB and E1-M3A will be made during the regular maintenance visits (2-4 per year) on-board the R/V Aegaeo. The duration of these visits is usually 1-2 days and can be extended upon request. Additionally, users can have unlimited access to back up buoys in Athens or Crete for preparatory work prior to deployment of their sensors.

Special Rules

The scientific and technical personnel of POSEIDON will carry out all operations, while training courses will be given on both hardware and software. In case of integration of new sensors into the system, the user will have to provide the software and hardware adaptations required.

3.3.2. PLOCAN

Infrastructure (short name)	Plocan (Plocan)	
Installation (short name)	Plocan (Plocan)	
Location	PLOCAN Test Site in Northeast of Gran Canaria Island, Canary Islands, Spain	
Coordinates/Routes	-	
Bottom depth	30m - 1000m	
Legal name of organisation	CONSORCIO PARA EL DISEÑO, CONSTRUCCIÓN, EQUIPAMIENTO Y EXPLOTACIÓN DE LA PLATAFORMA OCEÁNICA DE CANARIAS	
Country	Spain	
Contact	Website: www.plocan.eu	

Description:

Lataforma Oceánica de Canarias (PLOCAN) – Coastal Observatory Installations:

- 1) PLOCAN Test Site area of 23 km²
- 2) PLOCAN Platform
- 3) PLOCAN Coastal buoy
- 4) PLOCAN Gliders
- 5) PLOCAN Autonomous Surface Vehicles (ASVs)
- 6) PLOCAN Remotely Operated Vehicle (ROV)
- 7) PLOCAN HF RADAR

Web site address: www.plocan.eu

Description of the infrastructure:

PLOCAN is a multipurpose service centre with land- and sea-based novel infrastructures to support marine research, technology development and innovation. The centre provides a cost-effective combination of services, such as an observatory, a test site, a base for underwater vehicles, laboratories, training and an innovation hub. In addition PLOCAN is configured as a Marine Test Site available to projects focused on testing and demonstrating of all kinds of marine devices, like those related to marine renewable energy but also submarine and surface autonomous vehicles, fixed buoys and marine observatories, profilers and sensors. Observing systems and installations support the environmental monitoring needs of the Test Site. Some installations are shared with the deep and extended observatories (e.g. surface gliders, lab facilities, e-infrastructure).

- 1) PLOCAN Test Site reserved area of 23 km² with depths ranging from the coast to 600m managed by PLOCAN. It includes a multidisciplinary and permanent set of autonomous ocean observing platform and a subsea cable infrastructure prepared for the installation of ocean observing infrastructures.
- 2) PLOCAN Platform: A multipurpose autonomous ocean observing platform resting on the seabed over 30m depth, with several floors and up to 30m high. Observations are possible from this physical platform, which includes the access to power as well as high speed communication with PLOCAN onshore facilities.
- 3) PLOCAN Coastal buoy: Includes meteorological (air temperature, wind speed and direction, etc.) and oceanographic sensors in (sub) surface to measure variables like temperature, salinity, dissolved oxygen, pH, CO₂, Chla "a" and turbidity. Data is received on real time applying after the quality control. The continuous data is complemented with in situ discrete CTD/rosette sampling taken during cruises to measure physical and biogeochemical variables.
- 4) PLOCAN Gliders: 4 units which are operational till depths of 1000m, specifically 2 Slocum G3 glider from Teledyne Marine, a Seaglider from Kongsberg Maritime and a SeaExplorer from Alseamar. All the gliders are equipped with sensors to collect water column profiles, i.e. CTD, oxygen, Chla "a" and turbidity, plus CDOM (Seaglider) and hydrocarbon (SeaExplorer). They have been used in multiple actions, among them the periodical seasonal missions to the oceanic ESTOC station (included in TNA of FixO3).
- 5) PLOCAN Autonomous Surface Vehicles (ASVs): Two are available, specifically one Wave Glider SV2 from Liquid Robotics and a Sail Buoy from Offshore Sensing.
- 6) PLOCAN Remotely Operated Vehicle (ROV): Model Seabotix Vlbv-950 (deployable to 950 m.) manufactured by Seabotix. Payload: Bowtech camera HD b/n, Bowtech camera HD color, Tritech Micron MK3 sonar, arm 2GL. It is used for taking videos of ocean deployments and underwater behavior of sensors and devices.
- 7) PLOCAN HF RADAR: Model Seasonde from CODAR, measures surface marine currents in the Test Site area.

Services currently offered by the infrastructure:

PLOCAN installations included in the coastal observatory are open to offer services to regional, national and international interested parties. Some of the installations are operated on a regular basis and others upon demand, with an increasing number of access demands along the years..

The coastal buoy is exchanged at least twice a year, and can host additional instrumentation for atmospheric and (sub)surface tests. Clamp systems and other mechanical adapters can be manufactured locally upon request.

Besides logistical, technological and scientific support for all installations, the gliders are available for complementary measurements in the vicinity of the Platform and Test Site. Our gliders operate four times a year to and from PLOCAN to our oceanic ESTOC site serving the Test Site too, and allowing for sensor inter-comparison and validation. Further to the regular variables measured it is possible to host additional instruments, since some of our gliders have an open architecture, and thus can host a variety of sensors and communication systems, e.g. radiometer, modem, and small autonomous instruments.

PLOCAN onshore facilities are equipped with laboratories where samples collected during research cruises are analysed. Laboratory use is transversal and also serves Test Site activities for cruise-based environmental monitoring and sensor/observing system testing and validation.

Complementary TNA logistics can include the preparatory work for testing equipment at the nearby harbor of Taliarte before using the installation offered, as well as support with our small ship for deployment.

PLOCAN Test Site is also part of the infrastructures offered under the Marinet2 project to test marine renewables. The gliders were included in the TNA of FixO3 project too, where 2 trans-national users were given access.

Location (town, country) of the infrastructure

1) PLOCAN Test Site of 23 km²: Northeast of Gran Canaria Island, Canary Islands, Spain. Test site is a polygon with latitudes ranging from 28.02 to 28.06 N and longitudes from 15.33 to 15.40 W.

2) PLOCAN Platform: Within Test Site area, located 1.5 km off the coast, at a latitude of 28,041 N and longitude of 15,305 W.

3) PLOCAN Coastal buoy: Located within Test Site at depths ranging 40-100m.

4) PLOCAN Gliders: Mainly Atlantic Ocean.

5) PLOCAN Autonomous Surface Vehicles (ASVs): Atlantic Ocean

6) PLOCAN Remotely Operated Vehicle (ROV): Canary Islands

7) HF Radar: The two antennas are located at Las Palmas Port (28° 9,148' N, 15° 23,898' W) and in our land-based facilities (27° 59.546'N, 15° 22,080' W)

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA1/MoA2. **UA: day**

Modality used to declare access costs: TA-UC


Service and support

The centre provides a cost-effective combination of services, such as an observatory, a test site, a base for underwater vehicles, laboratories, training and an innovation hub. Services currently offered: PLOCAN installations included in the coastal observatory are open to offer services to regional, national and international interested parties. The coastal buoy can host additional instrumentation for atmospheric and (sub)surface tests. Gliders operate four times a year to and from PLOCAN to our oceanic ESTOC site serving the Test Site too. Support offered under this proposal: PLOCAN installations included in the coastal observatory are open to offer services to regional, national and international interested parties. Besides logistical, technological and scientific support for all installations, the gliders are available for measurements in the vicinity of the Platform and Test Site.

Special Rules

n/a

3.3.3. VLIZ

Infrastructure (short name)	VLIZ Coastal Observatory (VLIZ Coastal Observatory)	
Installation (short name)	VLIZ Coastal Observatory (VLIZ Coastal Observatory)	
Location	Location: Belgian Part of the North Sea a) RV Simon Stevin (Ferry Box / Automatic Underway Measuring System): Belgian Part of the North Sea b) VLIZ Thornton Buoy: Belgian Part of the North Sea (Latitude 51.58, Longitude 2.995) c) VLIZ bottom moored tripods: Belgian Part of the North Sea (51.366, 2.45), (51.300, 2.86), (51.230, 2.50), (51.483, 2.30), (51.411, 2.81), (51.700, 2.81), (51.335, 2.60), (51.580, 2.99), (51.640, 2.53), (51.460, 3.05) d) VLIZ regular sampling stations: Belgian Part of the North Sea (51.185, 2.701), (51.308, 2.85), (51.433, 2.80), (51.333, 2.5), (51.376, 3.22), (51.440, 3.13), (51.471, 3.058), (51.270, 2.905), (51.276, 2.61), (51.566, 2.25), (51.800, 2.55), (51.458, 2.35), (51.750, 2.7), (51.683, 2.416), (51.588, 3.012), (51.480, 2.45), (51.580, 2.790) e) VLIZ Unmanned Surface Vehicle (USV): Belgian Part of the North Sea f) VLIZ Automated unmanned vehicle (AUV): Belgian Part of the North Sea g) VLIZ Remotely Operated Vehicle (ROV): Belgian Part of the North Sea	
Coordinates/Routes	51°13'59.8"N 2°55'46.6"E	
Legal name of organisation	VLAAMS INSTITUUT VOOR DE ZEE VZW	
Country	Belgium	
Contact	Klaas Deneudt klaas.deneudt@vliz.be	

Description:

Description: Multi platform monitoring of physical, biogeochemistry, and biological parameters. Underwater ultrasound and porpoise echolocation. Unmanned Surface Vehicle (USV), Automated unmanned vehicle (AUV). Remotely Operated Vehicle (ROV).

a) RV Simon Stevin (Ferry Box / Automatic Underway Measuring System): Semi-continuous measurements are collected on a daily basis through the RV Simon Stevin underway system with the FCM, frf, fluorometer, turbidity, oxygen, temperature and salinity sensors.

b) VLIZ Thornton Buoy: Stationary offshore buoy close to the offshore wind farm Cpower, measuring semi-continuously pH, current, SPM, chlorophyll a, CO₂, oxygen, salinity, temperature, depth. This measurement buoy is a ICOS Class 1 Ocean Station with real-time data transfer.

c) VLIZ bottom moored tripods: Ten tripods are continuously deployed at fixed stations across the Belgian part of the North Sea and measure underwater ultra sound and porpoise echolocation. Tripods are equipped with acoustic release system and can be instrumented with additional sensors such as ambient low frequency hydrophones.

d) VLIZ regular sampling stations: about 18 stations on the Belgian part of the North Sea are visited for measurements and samples on a monthly or seasonal basis. Measurements include CTD temperature and salinity depth profiles, Fluorescence, nutrients, pigments, secchi depth, zooplankton observations (vpr, zooscan), phytoplankton (flowcam), etc.

e) VLIZ Unmanned Surface Vehicle (USV): the VLIZ USV is Autonaut watercraft that can fully autonomously perform scientific research of the atmosphere and water (surface) out at sea for weeks or even months straight. The USV can be deployed both nationally (Belgian part of the North Sea) as internationally. It can be launched from a beach, slipway or a research vessel. The USV is equipped to collect depth profiles of temperature and salinity (CTD), chl a, CDOM, turbidity, ADCP current

f) VLIZ Automated unmanned vehicle (AUV): the VLIZ AUV is a Gavia from Teledyne that is operational till depths of 1000 meters. The AUV is used in both national and international waters. The robot can be deployed from a dock, a small RHIB or from a large research vessel. The AUV is equipped to collect depth profiles of temperature and salinity (CTD), CTD, oxygen, chl a, turbidity, POM, ADCP, CO₂, Nitrate, has a digital camera and a multibeam on board.

g) VLIZ Remotely Operated Vehicle (ROV): the ROV Genesis is (l-w-h; 1.40 – 0.87 – 1.11m) deployable down to 1400m, and controlled by a pilot from a container mounted on the research vessel. Since 2015, the ROV Genesis is also deployed from the RV Simon Stevin for scientific campaigns in the shallow coastal water of the Belgian part of the North Sea taking bottom cores or mapping the sea bottom. The ROV is equipped with several lights, colour and black-and-white cameras, a working arm for simple samplings, and continuous registration of depth, course, height, swell, slope, temperature, turbidity and chlorophyll

Instruments/Sensors

See Website: [www.vliz.be](http://vliz.be), <http://vliz.be/en/vliz-monitoring>, <http://en.marine-robotics-centre>

Access Provided

Modality of access under this proposal: MoA1/MoA2. **UA: day**

Modality used to declare access costs: TA-AC

Service and support

The installations of the VLIZ coastal observatory are operated in the Belgian Part of the North Sea (BPNS) to serve marine scientists in Flanders and abroad. The BPNS covers the most south-western part of the North Sea and is bordered by the English Channel to the south-west and by the central part of the North Sea to the north-east. The BPNS is influenced by water from the 'channel' and from freshwater inputs from the Yzer and Scheldt and contains a unique sand bank system. The installations of the observatory are operated on a regular basis in the framework of the collection of long-term data series. In addition, the installations are deployed for ad hoc studies upon request. The observatory serves over 20 research groups a year directly. Thousands of users are served through the redistribution of collected data by the VLIZ data centre, a national oceanographic data centre of the IOC-IODE. This is done through various networks and portals including SeaDataNet, EMODNET, OBIS, etc. Specific virtual labs are developed in collaboration with LifeWatch to explore specific data types

Special Rules

n/a

3.4. Cabled Observatories

Cabled observatories					
Access provider	Country	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
AWI	DE	COSYNA	AWIPEV_UNH	6 month	1
AWI	DE	COSYNA	UNH	6 month	2
FMI	FI	Uto	Uto	Day	64
MI	IE	SmartBay	Observatory	Day (per port)	291
UPC	ES	OBSEA	OBSEA	Day	108

3.4.1. COSYNA_AWIPEV

Infrastructure (short name)	COSYNA_AWIPEV (COSYNA_AWIPEV)
Installation (short name)	COSYNA_AWIPEV (COSYNA_AWIPEV)
Location	Svalbard North Atlantic – Arctic – Kongsfjord
Coordinates/Routes	
Legal name of organisation	ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG
Country	Germany
Contact	https://www.awi.de/en/expedition/

Description:

Description: Four underwater pluggable access points for network and power, equipped with an ADCP and a profiling CTD (Sea & Sun; depth, T, conductivity, ChlA fluorescence, O2 and turbidity).

<https://www.awi.de/en/expedition/>

Access Provided

Modality of access under this proposal: MoA2. UA: 6 months. Modality used to declare access costs: TA-AC



Service and support

Services currently offered: Possibility to attach users' own sensors to the node system in the Arctic ocean in Svalbard; Access to additional environmental parameters which are measured continuously with the node system (T, S, turbidity, O2, Chl-a, currents, tides etc.). Logistic support to bring the sensor to Svalbard, technical assistance for the attachment preparation phase, the 10-day test phase, the establishment of the network between the users' computer and the sensor unit

Special Rules

n/a

3.4.2. COSNYA_UNH

Infrastructure (short name)	Coastal Observing System for Northern and Arctic Seas (COSYNA)	 Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research  ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG
Installation (short name)	Underwater Node Helgoland (COSYNA_UNH)	
Location	German Bight, North Sea	
Coordinates/Routes	54.193°N - 7.878°E	
Bottom depth	11 m	
Legal name of organisation	Helmholtz-Zentrum Geesthacht (HZG) & Alfred-Wegener-Institut (AWI)	
Country	Germany	
Contact	Prof. Dr. Philipp Fischer	
Alfred-Wegener-Institut, Helmholtz-Centre for Polar and marine	Research, Centre for Scientific Diving	
Kurpromenade 207	27498 Helgoland	
Tel: ++49 4725 640333	Email: philipp.fischer@awi.de	

Description:

COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea composed by fixed platforms, FerryBoxes, gliders and HF-radar systems. 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 was build up since 2007 and is fully operational since 2012.

COSYNA_UNH is a cabled underwater observatory operated by AWI together with HZG since 2012 and is providing power, network connection and server support for the permanent operation of in situ sensor systems. The node system has 10 underwater pluggable access points (for network (100 Mbit/ 1Gbit) and power (48V / 2.5 Amp) and is equipped with a standard sensor carrier with an ADCP) and a CTD plus Chl-a fluorescence, oxygen and turbidity sensors for basic oceanographic measurements. The 10 access points are fully remotely controlled. The user gets a "virtual computer" on the COSYNA server on which she/he can log in via remote access software and install own programs to control her/his sensor.

Web site address: <http://www.cosyna.de>

Instruments/Sensors

Access Provided

Partially remote: the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Unit of access (UA): 14 days.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users.


Service and support

The applicant can attach his/her own sensor and has full remote access.

Installation will be supported by a team of technicians and scientists of AWI/HZG for preparing the instrumentation; service the instrumented node, support diving for installation and recovering of the sensors at the end and process the data. A “virtual computer” is also provided to the user for full access to the instruments installed underwater.

Special Rules Data storage for own sensors is only temporally restricted. The owner of a sensor has to ensure, that the data are well stored

3.4.3. UTO

Infrastructure (short name)	Atmospheric and Marine Research Station (Utö)	 ILMATIETEEN LAITOS
Installation (short name)	Atmospheric and Marine Research Station (Utö)	
Location	Utö Island, Archipelago Sea, Baltic Sea	
Coordinates/Routes	59.78039°N - 21.35361°E	
Bottom depth	23 m (possibility to go down to 80 m, if needed)	
Legal name of organisation	Finnish Meteorological Institute (FMI)	
Country	Finland	
Contact	Lauri Laakso	
Finnish Meteorological Institute	Erik Palmenin Aukio 1, FI-00560 Helsinki	
Tel: +358-50-525 7488	Email: lauri.laakso@fmi.fi	

Description:

Utö is one of the main observing sites of FMI. The Island can be reached 4 times a week by free public transport and has a hotel with conference facilities. Marine observations are mainly scientists-operated, with strong support from FMI observing services unit.

Infrastructure includes the following observations:

- Surface waves and temperature; currents (-23 m ... -0.5 m); temperature, salinity, turbidity, chlorophyll, O₂ (-5 m); Ice cover; pCO₂; sea-atmosphere CO₂-flux;
- Temperature, salinity, O₂, nutrient profiles (-80 m...0 m) during open sea period only;
- A continuous water flow from the sea (possible to install new instruments utilizing ~ 5 lpm sea water/instrument)
- Atmospheric CO₂- and CH₄-concentrations;
Meteorology: wind speed and direction, temperature, PAR, diffuse and global radiation, weather camera; atmospheric trace gases; physical, chemical and optical properties of aerosol particles.

Web site address : en.ilmatieteenlaitos.fi/uto

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
ADCP	Underwater flows and surface waves	23 m	Automatic	Online, 30 min

Flow-through system	Temperature, Salinity, pCO ₂ , chlorophyll, turbidity	sampling depth 5 m (analysers in a measurement cabin)	Automatic	Online, 1-5 minutes
Eddy-covariance fluxes	FCO ₂	10 m a.m.s.l	Automatic	Online, 30 min (post-processing done once/year)
Inductive chain	Temperature, salinity, O ₂	0-80 m	Automatic (during open sea period only)	Online
Atmospheric observations	O ₂ , CH ₄ concentrations	50 m above the sea	Automatic	Online

Access Provided

Unit of access (UA): day.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).

Service and support

The online-marine component of Utö measurement station is new, built only in 2013-14. However, diverse manual oceanographic and meteorological observations are available since 1889. The station at Utö has enough 3-phase electricity available. Data can be transmitted through permanent optical fibre or 3G connection.

Utö TNA offers possibilities to use data of the available sensors during the period of TNA, install additional sensors by users and gather water samples for instruments (technical, safety and security limitations allowing). For instruments requiring very limited maintenance, users may participate only in installing/uninstalling activities.

FMI has a part-time technician at the site who can help in weekly maintenance 1-2 hours/week (TNA-users have to provide a detailed SOP describing the maintenance procedures).

Special Rules

All (physical) visits to the installation will be done under guidance of FMI support team with a prior security screening by the Finnish Defence Forces.

3.4.4. OBSEA

Infrastructure (short name)	Expandable Seafloor Observatory (OBSEA)	 UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH
Installation (short name)	Expandable Seafloor Observatory (OBSEA)	
Location	Barcelona, Catalan Coast (Spain), Western Mediterranean	
Coordinates/Routes	41.1819°N - 1.7524°E	
Bottom depth	20 m	
Legal name of organisation	Polytechnic University of Catalonia (UPC)	
Country	Spain	
Contact	Dr. Joaquín del Río Fernández Univeritat Politècnica de Catalunya Rambla Exposición 24 Tel:+34 609926966 Email: joaquin.del.rio@upc.edu	

Description:

OBSEA is an underwater cabled observatory connected with 4 km of cable to the coast of Vilanova i la Geltrú (Barcelona, Spain) and placed at a depth of 20m in a fishing protected area. Operations are done by scuba divers and small boats. A surface buoy located at 40m from the underwater unit is an extension of OBSEA working as surface platform for measuring oceanographic and environmental parameters. A Shore Station provides power (3.6kW) to feed all the devices and the fiber optic link (1Gbps) to establish communications. At the same time from land we manage alarms and data storage. With a length of 1000 meters the terrestrial cable connects the Ground Station to the Beach Manhole where the submarine cable begins its route to the node location at 4 km from the coast and 20 m depth.

OBSEA has nowadays two junction boxes with a total of 16 underwater webmate connectors.

Web site address: www.obsea.es

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
CTD	T, S, Depth, Conductivity, Sound Velocity	20 m	10 seconds	Real Time
AWAC	Currents and waves	20 m	1 minute	Real Time
Hydrophone	Acoustic pressure	20 m	96kSps	Real Time
Underwater VideoCameras	images	20 m	10fps	Real Time
Seismometer	Seabed vibrations	20 m	256Sps	Real Time
Meteo Station	T, Hr, P, wind	0 m	10 seconds	Real Time
Surface Camera	Images	0 m	10fps	Real Time
pH and pCO ₂ (early 2016)	-	0 m	soon	Real Time

Access Provided

- **Remote:** the measuring system is implemented by the operator of the installation and the presence of the user group is not required,
- **In person/hands-on:** the presence of the user group is required/recommended during the whole operation period)
- **Partially remote:** the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Unit of access (UA): day.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (in person/hands-on and partially remote access) or in his/her behalf by the access provider (remote access).

Service and support

The infrastructure offers power, communications and synchronization to instruments or systems to be deployed in the area. In addition offers the data of permanent instruments, like:

CTD, Hydrophone, Seismometer, Video Camera, AWAC, Meteo Station. Quality controlled data available in real time. Data from CTDs and Meteorological buoy are available in real time through as OGC SOS, IEEE 1451 and .csv or .txt files. Hourly data average with QC/QA are available in .csv and netCDF format. The Data can be accessed in EMODnet Physics, OGC SOS, IEEE 1451, and RAW data in .csv, .txt format through OBSEA web page and FTP server. Biological assessment of species through real time video cameras and cabled observatories is being carried out at Obsea. Permanent seismometers offer seismic data to regional (Catalan) and national (Spanish) seismic networks. Current meters data (AWAC) are being used to study coastal dynamics. UPC staff offers technical support for instrument deployment planning, interfacing with observatory, and access to real time instrument data after deployment.


Quality control of data is offered.

Logistics: ship and scuba divers for instrument deployment.

Special Rules

To be verified with the facility provider.

3.4.5. SMARTBAY

Infrastructure (short name)	SMARTBAY Observatory (SmartBay)	
Installation (short name)	SmartBay Observatory (SmartbayCable)	
Location	Galway Bay, Ireland, Atlantic Ocean	
Coordinates/Routes	53.22733°N - 9.26629°W	
Bottom depth	23 m (Chart Datum)	
Legal name of organisation	Marine Institute	
Country	Ireland	
Contact	Conall O Malley Marine Institute Marine Institute Building, Renville, H91R673 Oranmore, Ireland Tel: +353 (0)91 387200 Email: conall.omalley@marine.ie	

Description:

SmartBay cabled underwater observatory has been operational since August 2015 in the ocean energy test site in Galway Bay, Ireland. The observatory includes a fibre optic data and power cable, a sub-sea sensor hosting platform (node) and a floating sea laboratory (SeaStation) which will be used to connect to energy conversion devices being tested at the 1/4 scale ocean energy test site. This set of equipment is being made available for projects requiring power and data connections for instrumentation underwater or at the surface.

The sub-sea sensor hosting platform includes interfaces (ports) capable of providing electrical power and 2-way optical or electrical (Serial or Ethernet) high speed communications to scientific instruments from R&D projects or sensor developers; the platform includes a set of permanently deployed instruments (CTD, DO2, Turb./Fluor., ADCP, HDTV, hydrophone, acoustic array).

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
icListen Hydrophone	Sound pressure levels	23 m depth	Continuous	Real time

VEMCO fish tag detector	Fish tag counts	23 m depth	Continuous	Real time
Water Quality Monitor	T, S, Pressure, DO2, Chlorophyll, Turbidity	23 m depth	Continuous	Real time
Acoustic Array	Sound pressure levels	23 m depth	Continuous	Real time
CTD Idronaut	T, S, pressure	23 m depth	Continuous	Real time
Eco FL WetLabs	Turbidity Fluoremetry	23 m depth	Continuous	Real time
ADCP Teledyne RDI Workhorse Monitor	Current	23 m depth, sampling the entire water column above	30 s	Real time
HDTV Kongsberg PTZ	Image in visible wavelengths	23 m depth	Continuous	Real time

Access Provided

Unit of access (UA): month.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).

Service and support

The infrastructure includes the following data services: acquisition, storage, normalisation, presentation and visualisation and data standardisation. The infrastructures are being used by several Irish research bodies, universities and companies in research and development projects. Testing and validation of novel devices or instruments typically allow devices to move up TRLs 4 to 7.

In addition, Smartbay offers the following services: Power and data link to subsea instruments and sensors; environment with high power and high-speed data transmission capabilities; access to a floating sea laboratory (SeaStation) connected to the subsea observatory; testing

and development of ocean energy device components in a 'real world' environment; support to surface or underwater marine research.

Users of the CPO will be offered a high-quality, end-to-end service including:

- 1) Pre-deployment testing on a dedicated, custom-built test rig to simulate subsea CPO conditions;
- 2) Dedicated operational team providing bench testing, deployment, operations and maintenance, recovery of the sensor/equipment;
- 3) Project specific ICT team for data acquisition and data transmission support;
- 4) Any deployment at the CPO will have access to the observatory's or databuoy's power, data acquisition and data transmission systems;
- 5) Real-time data transmission and visualization through a dedicated and secure log-in via the SBI online data portal. All data transmitted and visualized via SBI is encrypted to ensure client data security. A SOS (OGC compliant) web service is also available for automatic data retrieval.

Users the SmartBay infrastructure will be offered a high-quality, end-to-end service including; Pre-deployment testing on a dedicated, custom-built test rig to simulate subsea conditions. Dedicated operational team providing bench testing, deployment, operations and maintenance, recovery of the sensor/equipment. Data acquisition and data transmission support. Real-time data transmission and visualization through dedicated and secure VMware.


Special Rules

n/a

3.5. Ferryboxes

Ferryboxes					
Access provider	Installation country code	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
CEFAS	GB	FerryBox	FerryBox	Day	144
HZG	DE	COSYNA	SFB	Day	60
HZG	DE	COSYNA	FB	Day	45
NIVA	NO	NorFerry/NorSoo n	TF, FA, NO	Day	133
NIVA	NO	NorFerry/NorSoo n	NRS	Week	15
SMHI	SE	FerryBox	FerryBox	Day	53
SYKE	FI	ALG@LINE	ALG@LINE	Day	80
TALTECH	EE	CGoFAOS	CGoFAOS	Day	72

3.5.1. CEFAS

Infrastructure (short name)	CEFAS-FerryBox (CEFAS-FerryBox)	
Installation (short name)	RV Cefas Endeavour (RV Cefas Endeavour)	
Location	UK waters	
Coordinates/Routes	Bottom depth	
Legal name of organisation	Centre for Environment, Fisheries and Aquaculture Science	
Country	United Kingdom	
Contact		

Description:

Ferrybox system on RV Cefas EndeavourLocation: Operates in UK waters throughout the year. System for autonomous, cost-efficient and continuous collection of sea surface oceanographic HF, high resolution data:S, T, fluorescence, turbidity, flow cytometry. Services currently offered: Data has been used within the eutrophication monitoring programme and as an essential component of fisheries surveys to study environmental drivers of small pelagic fishes (eggs, larvae and adults) with specific focus on S, T and Chl-a maps.

The FerryBox system on RV Cefas Endeavour is used for autonomous and continuous collection of the sea surface oceanographic data. Core variables include sea surface salinity

and temperature, turbidity, chlorophyll fluorescence, oxygen, nutrients and meteorological parameters. A flow cytometer could be connected if requested.

Instruments/Sensors

Instrument	Parameters	Depth (m)	Sampling frequency	Data availability
GPS	Latitude, longitude, course, speed, pitch, roll	N/A	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
PT100	Sea surface temperature	-4	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Seabird CT	Conductivity, temperature, sound velocity, salinity	-4	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Aanderaa optode	Oxygen concentration Oxygen percent saturation temperature	-4	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Seapoint SCF	Chlorophyll fluorescence, calibrated to chlorophyll in mg l ⁻¹ after recovery	-4	1 minute	Data telemetry every 10 minutes (basic QC)

				Full QC data available after cruise
Seapoint OBS	Turbidity (FTU), calibrated to suspended particulate matter in mg l ⁻¹ after recovery	-4	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Algal Online Analyser	Green algae, blue algae, diatoms, cryptophyta, CDOM, photosynthetic yield	-4	3 minutes	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Licor PAR	In air-photosynthetically active radiation	+ 15m	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise
Gill met pack	Wind direction, wind speed, pressure, relative humidity, air temperature,	+ 15m	1 minute	Data telemetry every 10 minutes (basic QC) Full QC data available after cruise

Access Provided

Modality of access under this proposal: MoA2.UA: day Modality used to declare access costs:TA-UC

Service and support

Support offered Access to the Ferrybox data, Ferrybox infrastructure to deploy new sensors/instruments and the associated Ferrybox data.

Automated water sampler offered for collecting additional underway samples. Technical assistance with integration of additional sensors.

3.5.2. COSNYA FERRYBOXs

Infrastructure (short name)	Coastal Observing System for Northern and Arctic Seas (COSYNA)	 Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research
Installation (short name)	COSYNA FerryBox (COSYNA_FB)	
Location	From the English coast to Germany and Skagerrak, Southern North Sea.	
Coordinates/Routes	Southern North Sea with different ports	
Legal name of organisation	Helmholtz-Zentrum Geesthacht (HZG)	
Country	Germany	
Contact	Helmholtz-Zentrum Geesthacht GmbH Institute of Coastal Research Max-Planck-Str. 1, 21502 Geesthacht, GERMANY Tel: +49 4152 872358	

Description:

COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea composed by fixed platforms, FerryBoxes, gliders and HF-radar systems. 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 was build up since 2007 and is fully operational since 2012.

COSYNA_FB is one of three FerryBox systems on different routes in the southern North Sea equipped with sensors T, C/S, turbidity, DO, pCO₂, pH, chlorophyll-a-fluorescence, partly nutrients (NO_x, NO₂, PO₄, SiO₂) and a cooled water sampler. The first vessel is a ferry (FunnyGirl) and operates between Büsum and the island Helgoland from April to October on a daily basis, the second vessel (Hafnia Seaways) goes from Cuxhaven (DE) to Immingham (GB) ~6times/week year-round and the third vessel (Lysbris) cruises between Halden (NO), Zeebrugge (BL), Immingham (GB) and Moss (NO) year-round.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
Alkalinity (partly)	Total alkalinity	Surface (~5 m)	20 s	After each cruise
Nutrient Analyser (partly)	NO ₂ , NO _x , NH ₄ , o-PO ₄ , SiO ₂	Surface (~5 m)	20 s	After each cruise

Turbimeter	Turbidity (FTU)	Surface (~5 m)	20 s	After each cruise
pCO2 Sensor	pCO2	Surface (~5 m)	20 s	After each cruise
pH sensor	pH	Surface (~5 m)	20 s	After each cruise
Aanderaa Optode	Dissolved oxygen	Surface (~5 m)	20 s	After each cruise
Fluorometer	Chlorophyll-a fluorescence	Surface (~5 m)	20 s	After each cruise
Salinometer	Temperature, conductivity, salinity	Surface (~5 m)	20 s	After each cruise

Access Provided

- **In person/hands-on:** the presence of the user group is required/recommended during the whole operation,
- **Partially remote:** the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Unit of access (UA): day.

Quantity of access available for the 3rd Call: 120 UA=120 days.

Users can apply for a maximum access duration of 120 days (120 UA). Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access). HZG provides access to one of the three FerryBox systems installed on the vessels FunnyGirl, Hafnia Seaways and Lysbris.


Service and support

All data from the COSYNA nodes are delivered real- or near-real time to the COSYNA data server open to the public via free internet connection. Furthermore, all underway FB data are delivered in near-real-time to the NOOS portal, including data quality flags. All systems have a remote access via mobile phone (in the harbour) and partly via satellite. A support team of technicians and scientists of HZG will prepare the instrumentation; service the instrumented ferry; support operations at sea; support in processing the data.

Special Rules

To be verified with the facility provider.

3.5.3. NORFERRY/NORSOOP

Infrastructure (short name)	NorFerry/NorSOOP Installations: (TF, FA, NO)	
Installation (short name)	NorFerry/NorSOOP Installations: (TF, FA, NO)	
Location	Location: 1 - S Baltic Sea and North Sea, 2: Norwegian Sea and Barents Sea , 3: North Sea, Norwegian Sea, North Atlantic	
Coordinates/Routes	59.61589°N – 10.651023°E	
Legal name of organisation	NORSK INSTITUTT FOR VANNFORSKNING	
Country	Norway	
Contact	andrew.king@niva.no www.niva.no/norsoop https://www.niva.no/en/water-data-on-the-web/ferrybox-ships-of-opportunity	

Description:

The NorFerry infrastructure began in 2001 and covers a network of five Ferrybox systems in the Baltic, North Sea, Atlantic Ocean, Norwegian Sea, and Arctic areas. The installations offered as TNA are passenger vessels and fixed station (NRS) with FerryBox systems that include a core sensor package with thermosalinograph, inlet temperature sensor, oxygen, chl-a fluorescence, turbidity and system for water sampling; with additional sensors for PAH, phycocyanin, cDOM, pCO₂, pH, and microplastics sampling units on some installations. Both FA and TF have radiometers for marine reflectance of the sea surface. The infrastructure is used for physical oceanography, pelagic biodiversity, chemical (contaminants), and biogeochemical (marine acidification) studies.

Instruments/Sensors

Thermosalinograph, inlet T sensor, O₂, chl-a fluorescence, turbidity and system for water sampling, sensors for PAH, phycocyanin, cDOM, pCO₂, pH, and microplastics sampling units, radiometers for marine reflectance of the sea surface.

Access Provided

Modality of access under this proposal: MoA1/MoA2. UA:day Modality used to declare access costs: TA-CB Support offered under this proposal:

Service and support

Services currently offered: All installations are available to do research on eutrophication, biodiversity, chemistry, and biogeochemistry. NorFerry has supported research activities of between 3-6 international users using the facility per year. Dedicated NIVA personnel are

available in Oslo and Bergen to assist with the installations. A typical access duration can be from a few days on the short 2 days trip between Oslo and Kiel (FA) or ~1 week for TF, NO, and NRS installations. Preparations of tests and sensors are possible in advances at NIVA premises, NRS, or onboard ships since workshops can be made available. NIVA chemical and biological laboratories are available for calibration purposes.

The visiting researcher will be in direct contact with NIVA researchers and with supporting technical staff. Preparations of tests and sensors are possible in advances at NIVA premises, NRS, or onboard ships since workshops can be made available. NIVA chemical and biological laboratories are also available for calibration purposes

Special Rules

N/a

3.5.4. SMHI-FERRYBOX

Infrastructure (short name)	SMHI-FerryBox (SMHI-FerryBox)	SMHI
Installation (short name)	SMHI-FerryBox (SMHI-FerryBox)	
Location	Location: 1) Tavastland, VOS, Lubeck-Oulu-Kemi, 2) & 3) Svea, Swedish research vessel, monthly monitoring cruises in the Baltic Proper, Kattegat and Skagerrak	
Legal name of organisation	SVERIGES METEOROLOGISKA OCH HYDROLOGISKA INSTITUT	
Country	Sweden	
Contact	Website: http://www.smhi.se/hfa_coord/BOOS/Ferrybox/Transpaper/	

Description:

Name of the infrastructure (and its installations, if applicable):

Tavastland VOS infrastructure

Svea, Swedish research vessel, VOS infrastructure

Svea, Swedish research vessel, monitoring infrastructure

Location (town, country) of the infrastructure:

Tavastland, VOS, Lubeck-Oulu-Kemi

Svea, Swedish research vessel, monthly monitoring cruises in the Baltic Proper, Kattegat and Skagerrak

Web site address:

http://www.smhi.se/hfa_coord/BOOS/Ferrybox/Transpaper/TransPaper_latest_table.htm

<https://www.slu.se/en/departments/aquatic-resources1/research-vessel/>

Description of the infrastructure:

Tavastland, VOS infrastructure:

SMHI is running the ferrybox on Tavastland since several years. The system has sensors for salinity, temperature, oxygen, chlorophyll fluorescence, turbidity, CDOM, phycocyanin fluorescence and pCO₂. The data from the ferrybox is sent to SMHI every hour.

Svea, Swedish research vessel

Svea is the new Swedish research vessel that is being built in Spain in 2019. SMHI will use Svea to do monthly monitoring in the Baltic Proper, Kattegat and Skagerrak. The research vessel have several new platforms for ocean monitoring, such as ROTV and MVP. The ferrybox will be equipped with sensor measuring salinity, temperature, oxygen, chlorophyll fluorescence, turbidity, CDOM, phycocyanin fluorescence, phycoerythrin fluorescence, pCO₂ and spectrophotometric pH. There will be a IFCB installed next to the ferrybox and automatic samplers that can take water samples at given positions. The system also includes a passive sampler system with six tubes ready for filtration of, for example, zooplankton.

Services currently offered by the infrastructure:

Tavastland VOS installation is available for researchers.

Instruments/Sensors**Access Provided**

Modality of access under this proposal: MoA1/MoA2. UA: day Modality used to declare access costs: TA-UC

Service and support**Services currently offered:**

1) Tavastland VOS installation is available for researchers. 2) Svea is being built at the moment and will be operational during fall 2019.

Support offered under this proposal:

1) Tavastland: technical help with additional installations within the ferrybox.
2) Svea: technical help with external sensors for the ferrybox or additional water sampling at the stations along the route.

Special Rules

n/a

3.5.5. ALG@LINE

Infrastructure (short name)	Marine Research Centre, Ferrybox network in the Baltic Sea (SYKE-ALG@LINE)	 Finnish Environment Institute
Installation (short name)	Ferrybox at m/s Silja Serenade (SILJA SERENADE)	
Location	Helsinki – Stockholm, Baltic Sea	
Coordinates/Routes	Helsinki - Stockholm	
Legal name of organisation	Finnish Environment Institute (SYKE)	
Country	Finland	
Contact	Jukka Seppälä	
	Erik Palmenin Aukio 1, 00560 Helsinki, Finland	
	Finnish Environment Institute, Tel: +358 295 251 631	

Description:

SYKE Alg@line project in the Baltic Sea monitors the state of the sea and detects algal blooms. Several millions of data points are collected annually from the Baltic Sea, using a fleet of 5-7 ferries. Two best equipped ferries offered in TNA are m/s Silja Serenade, which travels daily between Helsinki and Stockholm (Sweden) and m/s Finnmaid, which travels approx. twice a week from Helsinki to Travemünde (Germany) and back.

Both ferries are equipped with flow-through system with thermosalinograph, chlorophyll, phycocyanin and CDOM fluorometers, turbiditymeter and refrigerated sampling unit providing discrete water samples for laboratory analyses (e.g. microscopy, flowCAM, nutrients, optical analysis, experimental work). Additional sensors e.g. for primary production (FRRF) and light reflectance are used periodically, new sensors for light absorption and pCO₂ will be soon implemented. Data can be retrieved in real time using satellite or GSM connection (basic sensors) or downloaded during harbour visits (additional sensors).

Alg@line data is available e.g. through MyOcean and has also been delivered to users based on mutual cooperation, including scientific advice. Algaline ships maintained by SYKE host measurement systems from other countries, and periodically they are used as platforms for international short-term studies.

Web site address: <http://www.syke.fi/en-US>

Instruments/Sensors

instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
Automated sampler, ISCO	water samples	5 m	automatic	24 samples per transect
Fluorometer Trios MicroFluCDOM	CDOM fluorescence	5 m	automatic	20 seconds
Fluorometer Trios MicroFluBlue	phycocyanin fluorescence	5 m	automatic	20 seconds
Fluorometer Wetlabs FLNTU	Chlorophyll fluorescence, turbidity	5 m	automatic	20 seconds
Thermosalinograph SeaBird 45	temperature, salinity	5 m	automatic	20 seconds

Access Provided

- **Remote:** the measuring system is implemented by the operator of the installation and the presence of the user group is not required,
- **In person/hands-on:** the presence of the user group is required/recommended during the whole operation period,
- **Partially remote:** the presence of the user group is required at some stage e.g. installing and un-installing user's equipment.

Unit of access (UA): day.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (in person/hands-on and partially remote access) or in his/her behalf by the access provider (remote access).

Service and support

SYKE offers possibilities to use data of the available sensors in Alg@line ferries, install additional sensors by users (technical and safety limitations allowing) and gather water samples for instrument.

There are possibilities for 1-3 weekly visits to the ships, to install and maintain sensors and to fetch water samples. Deliver of access will depend on the complexity of users instruments and demand. Installing users' equipment will be subjected to technical and safety limitations and data from such new instruments may be available during weekly harbour visits only, when user may also perform maintenance of their instruments.


SYKE support team consists of technicians and scientists regularly operating the ferrybox systems. Team provides assistance to users during installation of new instrument (piping,

electricity, interfacing, safety) and during basic maintenance. SYKE scientific support team assists in the selection of methods and instrumentation and measuring protocols if needed and assist in analyzing the data from contemporary ferrybox devices.

Special Rules

All visits to the installation will be done under guidance of SYKE support team.

3.5.6. Central Gulf of Finland Autonomous Observing System

Infrastructure (short name)	Central Gulf of Finland Autonomous Observing System (CGOF)	
Installation (short name)	CGoFAOS (CGoFAOS)	
Location	Gulf of Finland	
Coordinates/Routes	60.15,24.92	
Legal name of organisation	TALLINNA TEHNIKAULIKOOL	
Country	Estonia	
Contact	Website: http://ferrybox.msi.TALTECH.ee/	

Description: :

Ferrybox system in Tallinn-Helsinki line; 2: Keri bottom mounted profiler. Location: Installation 1 from Tallinn, Estonia to Helsinki, Finland; Installation 2: Central Gulf of Finland, Estonia

Data from existing measurement devices as well as electricity and communication. Vertical profiling data to investigate dynamics of this stratified basin. Ferrybox data for physical, biogeochemical and biological studies. Assessment of the environmental status of the Gulf of Finland regarding eutrophication. Support offered under this proposal: Physical and biogeochemical studies in the highly variable estuarine environment, or for testing new sensors. Installation of current profilers or other devices, both on the island or in water, is possible.

Instruments/Sensors

Modality of access under this proposal: MoA1/MoA2. UA:day Modality used to declare access costs: TA-UC

Access Provided

Service and support

Services currently offered: Data from existing measurement devices as well as electricity and communication. Vertical profiling data to investigate dynamics of this stratified basin. Ferrybox data for physical, biogeochemical and biological studies. Assessment of the environmental status of the Gulf of Finland regarding eutrophication.

Support offered under this proposal: Physical and biogeochemical studies in the highly variable estuarine environment, or for testing new sensors. Installation of current profilers or other devices, both on the island or in water, is possible.


Special Rules

N/a

3.6. Fixed Platforms

Fixed Platforms					
Access provider	country	Name of infrastructure	Short name	Unit of access(UA)	Access in UA
IFREMER	FR	COAST-HF MAREL	MAREL	Day	40
IFREMER	FR	COAST-HF SCENES	SCENES	Day	33
IFREMER	FR	COAST-HF SMILE	SMILE	Day	33
AZTI	ES	EUSKOOS	Donostia buoy	Day	29
CEFAS	GB	CEFAS SMARTBUOYS	SmartBuoy	Day	144
CNR	IT	SICO	MPLS	6 months	1
CNR	IT	S1-GB	S1-GB	6 months	192
CNR	IT	ACQUA ALTA	AAOT	8 weeks	107
CNR	IT	CoCM	CoCM	6 month	1
CNRS	FR	EOL BUOY	EOL buoy	8 week	8
CNRS	FR	SSL@MM	SSL@MM	Day	45
HZG	DE	COSYNA	MUO	2 weeks	2
IH	PT	MONIZEE	MONIZEE_MP B	Day	333
MI	IE	SMARTBAY	SBDataBuoy	Day	84
OGS	IT	MAMBO	Miramare	Day	144
RBINS	BE	MOW1-WO5- WO8	MOW1	Day	32

3.6.1. Coast HF MAREL

	COAST-HF MAREL Carnot buoy (MAREL)	
Installation (short name)	COAST-HF MAREL Carnot buoy (MAREL)	
Location	Boulogne sur mer harbour, France	
Legal name of organisation	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	
Country	France	
Contact	https://www.seanoe.org/data/00286/39754/	

Description:

The MAREL (Mesures Automatisées en Réseau pour l'Environnement Littoral) Carnot system developed and implemented by Ifremer (French Research Institute for Exploitation of the sea) in 2004 is a moored buoy equipped with physico-chemical and biological measuring devices working in continuous and autonomous conditions. The system is located in the Boulogne-sur-Mer harbor (eastern English Channel) influenced both by marine coastal and fresh waters. The measuring station is equipped with high performance systems for seawater analysis and near real time data transmission. This system records with a high frequency resolution (20 minutes), the following parameters: estimated sea level, gust wind speed, wind from direction relative true north, horizontal wind speed, relative humidity, light irradiance surface PAR, sea temperature, practical salinity, ph, dissolved oxygen, fluorescence, turbidity. For nitrate + nitrite, phosphate, silicate parameters the sampling frequency is set to 12 hours. In 2019, MAREL Carnot will be equipped with a COSTOF2 (Communication and Storage Front-end, 2nd generation) which is a data communication and backup tool. The COSTOF2 will allow the reliable and synchronized connection of new sensors such as flow cytometer, FRRF, spectral fluorometer. These sensors are then coordinated and can be programmed via COSTOF2, using a web interface.

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA2. UA: day. Modality used to declare access costs: TA-UC

Service and support


Services currently offered: NRT access to physico-chemical and biological data (QA/QC + operational data flow via Coriolis). Specifically devoted user interfaces to process data. A support team formed by at least one technician, one head scientist will assist the user group, taking also care of installing/uninstalling operations. The user will have access to the infrastructure by car or by boat, this service will be arranged by the operator. The users will also have access to specific user interfaces specifically devoted to MAREL Carnot data processing (QC, time alignment of the different sensors, data completion, statistics summary,

classification, etc). The users may also have access to supplementary data (Low Frequency monitoring programmes, Earth Observation products) to optimize data interpretation

Special Rules

N/a

3.6.2. Scenes

Infrastructure (short name)	SCENES (SCENES)	
Installation (short name)	SCENES (SCENES)	
Location	Le Havre - Seine Estuary mouth, France	
Legal name of organisation	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	
Country	France	
Contact	http://www.coriolis-cotier.org	

Description:

The SCENES buoy was developed and implemented by Ifremer (French Research Institute for Exploitation of the sea) in 2017. It consist in a moored buoy and a benthic station equipped with hydrodynamics, physico-chemical and biological sensors working in continuous and autonomous conditions. The system is located in the Seine Estuary mouth (eastern English Channel) influenced both by marine coastal and fresh waters. The measuring station provide near real time data transmission (for the surface data). This system records with a high frequency resolution (15 minutes), the following parameters at the surface: estimated sea level, wind from direction relative true north, horizontal wind speed, relative humidity, sea temperature, practical salinity, dissolved oxygen, fluorescence, turbidity. The benthic station records sea level, practical salinity, fluorescence and turbidity every 30 minutes. An ADCP provide a current velocity profile (every 30 minutes) and wave parameters (every hour).

<http://www.coriolis-cotier.org>

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA2. UA: day. Modality used to declare access costs: TA-UC Support offered under this proposal:

Service and support

Services currently offered: Ifremer is leading 4 field surveys per year at the station, permitting sensor deployment and maintenance, but also cross calibration vertical profiles from the research vessel (CTD+Turbidity+LISST (PSD), SPM concentration, OM content, chl_a concentration). Scientists would be invited to participate to these cruises to test and deploy their sensors both from the RV or from the buoy. A support team formed by at least one technician, one engineer 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 users will also have access to environmental data and EOY collected by the station, together with the possibility to participate to oceanographic cruises to cross-calibrate their sensors. The users may also have access to supplementary data (additional monitoring data from the Estuary, satellite ocean color data,

numerical model results (hydrodynamics and sediment dynamics)) to optimize data interpretation.

3.6.3. SMILE

Infrastructure (short name)	COAST-HF SMILE buoy (IR-ILICO) (SMILE)	
Installation (short name)	COAST-HF SMILE buoy (IR-ILICO) (SMILE)	
Location	Luc sur Mer - Seine Bay, France	
Legal name of organisation	INSTITUT FRANCAIS DE RECHERCHE POUR L'EXPLOITATION DE LA MER	
Country	France	
Contact	https://www.seanoe.org/data/00425/53689/	

Description: The SMILE buoy was developed and implemented by Ifremer (French Research Institute for Exploitation of the sea) in cooperation with the Caen University in 2015. It consist in a moored buoy physico-chemical and biological sensors working in continuous and autonomous conditions. The system is located in the Seine Bay (eastern English Channel) influenced both by marine coastal and fresh waters. The measuring station provide near real time data transmission. This system records with a high frequency resolution (30 minutes), the following parameters at the surface: wind from direction relative true north, horizontal wind speed, relative humidity, aerial PAR, and 1.5m below surface : sea temperature, practical salinity, dissolved oxygen, fluorescence, turbidity.
<https://www.seanoe.org/data/00425/53689/>

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA2.

UA: day

Modality used to declare access costs: TA-UC


Service and support

Services currently offered: Four field surveys per year at the station, permitting sensor deployment and maintenance, and cross calibration vertical profiles from the research vessel (CTD +Turbidity+LISST (PSD), SPM, OM content, chl-a). Support offered under this proposal: Scientists invited to participate to the cruises to test and deploy their sensors both from the RV or from the buoy.

Special Rules

N/a

3.6.4. EUSKOOS

Infrastructure (short name)	EusKOOS (EusKOOS Donostia buoy)	
Installation (short name)	EusKOOS (EusKOOS)	
Location	Buoy on the continental slope of SE Bay of Biscay offshore San Sebastian (Spain):	
Bottom depth	Bottom Depth: 570m	
Legal name of organisation	FUNDACION AZTI - AZTI FUNDAZIOA	
Country	Spain	
Contact	http://www.euskoos.eu	

Description:

The Donostia buoy is part of the Basque Operational Oceanography System EusKOOS. Aiming to improve the understanding on the ocean processes governing the ocean circulation and to develop an Operational Coastal Observatory in the Basque Country Region, the Directorate of Emergency Attention and Meteorology (Euskalmet) of the Basque Government (Regional administration) has promoted, since 2001, the progressive installation of different in-situ observing marine platforms in the area. Starting by a network of shallow waters coastal stations (water depth 20m), the observing system was extended offshore in 2007 through the mooring of the Donostia metocean buoy (located over the slope) and, in 2009, through the installation of a HF Radar system.

The Donostia buoy is sending in NRT the following parameters: Spectral waves (wave height, period and direction, Sea water temperature and salinity and marine currents profiles down to 200 m water depth, Atmospheric pressure and temperature, Wind direction and intensity, Solar radiation.

It's a unique operational platform providing high frequency (hourly) water column information from surface down to 200m with 7 TS Seabird SBE25 (transmitting in real-time through an inductive cable) and 1 RDI WS 300 looking downwards; and it is located in the centre of the EusKOOS Long Range HF Radar footprint.

The southeastern part of the Bay of Biscay is confined, to the south, by the west-east oriented Spanish coast and, to the east, by the north-south oriented French coast. The SE BoB is an area characterized by complex circulation patterns and where relevant human activities linked to marine resources is concentrated (sport, artisanal and commercial fishing, tourism, industry, increasing offshore aquaculture and marine renewables, etc.) and thus, represents a particular challenge for the accurate monitoring and forecast of 4D transport patterns.

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA2.

UA: day

Modality used to declare access costs: TA-UC


Service and support

Services currently offered: Interested researchers or companies will be able to install their own sensors in the buoy during the platform maintenance time slot (buoy moored/ recovered during operations every 6 months).

Special Rules

N/a

3.6.5. SMARTBUOY

Infrastructure (short name)	SmartBuoy monitoring network (SmartBuoy monitoring network)	
Installation (short name)	SmartBuoy monitoring network (SmartBuoy monitoring network)	
Location	UK Waters Location: Warp, West Gabbard	
Coordinates/Routes	SmartBuoy locations: Warp: 51.525 N, 1.032E, West Gabbard 51.955N, 2.110 E	
Legal name of organisation	Centre for Environment, Fisheries and Aquaculture Science	
Country	United Kingdom	
Contact	Website: http://wavenet.cefas.co.uk/Smartbuoy/Map	

Description:

SmartBuoys are deployed at coastal locations within the UK Marine Eutrophication Monitoring Programme and the Warp and West Gabbard are within the areas covered by the North Sea and Channel supersites. They are used to collect high-frequency timeseries of surface salinity, temperature, turbidity, oxygen saturation, chlorophyll fluorescence and nutrient concentrations. Data are returned to the laboratory in near real time. Water samples are collected and preserved onboard for later analysis of nutrients and phytoplankton species. The SmartBuoys are serviced 4 times a year during which samples are collected by rosette at the sites and on transects between the sites. Users would also be able to access the rosette for sampling. Water samples are collected and preserved onboard for later analysis of nutrients and phytoplankton species. Parameters: High-frequency NRT series of surface S, T, turbidity, O2 saturation, Chlo fluorescence and nutrient concentrations.

Instruments/Sensors

Instrument	Parameters	Depth (m)	Sampling frequency	Data availability
Aanderaa CT	Conductivity, temperature, salinity	-1	Burst average of 1Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months

Druck PDCR4000	pressure	-1	Burst average of 1Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months
Analogue Devices ADXL202	Roll, pitch	-1	Burst average of 1Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months
Seapoint SCF	Chlorophyll fluorescence, calibrated to chlorophyll in mg l ⁻¹ after recovery	-1	Burst average of 1Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months
Seapoint OBS	Turbidity (FTU), calibrated to suspended particulate matter in mg l ⁻¹ after recovery	-1	Burst average of 1Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months
Aanderaa optode	Oxygen concentration Oxygen percent saturation temperature	-1	Burst average of 0.2Hz for 10 minutes, every 30 minutes	Data telemetry every 2 hours (basic QC) Full QC data available after recovery every 3 months
Licor PAR	Photosynthetically active radiation	0, -1, -2	Burst average of 1Hz for 10 minutes,	Data telemetry every 2 hours (basic QC)

			every 30 minutes	Full QC data available after recovery every 3 months
Discrete water sampler	Nitrate, silicate, phytoplankton species composition and abundance	-1	Every 4-8 days	Data available after recovery every 3 months

Access Provided

Modality of access under this proposal: MoA2.

UA: day

Modality used to declare access costs

Service and support

TA-UC Support offered under this proposal: Access to the data, mooring infrastructure to deploy new sensors/instruments and rosette sampling for collecting additional samples. Access to the routine SmartBuoy data.

Services currently offered: Deployment and testing of new instrumentation with many partners including manufacturers and universities, and for deployment of passive samplers within and other research programmes.

Special Rules

N/a

3.6.6. Acqua Alta Oceanographic Tower

Infrastructure (short name)	CNR ISMAR Observing System (ISMAR OS)	 ISMAR Istituto di Scienze Marine
Installation (short name)	Acqua Alta Oceanographic Tower (AAOT)	
Location	Mediterranean Sea, Northern Adriatic, Gulf of Venice	
Coordinates/Routes	45.31435°N - 12.508317°E	
Bottom depth	16 m	
Legal name of organisation	National Research Council of Italy (CNR)	
Country	Italy	
Contact	Mauro Bastianini CNR ISMAR Castello 2737/f Tesa 104, 30122 Venezia, Italy Phone: +39 0412407982 – Fax: +39 0412407940 mauro.bastianini@ismar.cnr.it	

Description:

The “Acqua Alta” research 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 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 and oceanographic instruments. 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 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.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
Meteo station Davis VantagePro2	Wind speed and direction, Air temperature, Humidity	+ 17 m	30 min	30 min
Nortek Awac	Current Profiles	-1 to -15 m	30 min	30 min
Nortek Awac	Waves (high, direction, period)	sea surface	30 min	30 min
SeaCAT	Temperature, Oxygen, Turbidity Conductivity/Salinity	- 3, -7, - 13 m	60 min	60 min

Access Provided

- **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 user's equipment.

Unit of access (UA): 2-months.

A user or a user group shall be given access to the infrastructure for specific experiments, tests of sensors and in-situ validation, or to collect additional data to the ones already acquired by the operator.

Service and support

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.

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 CNR ISMAR, as well as lodging and meals onboard.

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

Special Rules

Researchers must provide an insurance statement. No smoking is allowed on board, safety equipment is not provided.

3.6.7. Corsica Channel Mooring - MPLC (CoCM)

Infrastructure (short name)	Corsica Channel Mooring - MPLC (CoCM) (Corsica Channel Mooring - MPLC (CoCM))	 Consiglio Nazionale delle Ricerche
Installation (short name)	Corsica Channel Mooring - MPLC (CoCM) (Corsica Channel Mooring - MPLC (CoCM))	
Location	Ligurian sea -Tyrrhenian sea,	
Bottom depth	450	
Legal name of organisation	CONSIGLIO NAZIONALE DELLE RICERCHE	
Country	Italy	
Contact	Mireno Borghini CNR ISMAR Forte Santa Teresa, 19036 Pozzuolo di Lerici (SP), Italy Tel: +39 01871788913 http://www.ismar.cnr.it/infrastructures/observational-systems/moorings/il-canale-di-corsica	

Description:

Corsica Channel, MPLC has a strategic location in the area of the NW Med where the Northern Current develops. It is located nearby the HF radar network coverage as part of the NW Med PSS. Mooring and HFR (proposed in the VA) will provide complementary information both along the water column and at the surface to describe water masses characteristics and current transport. Moreover, along the mooring chain, the automated imaging system (GUARD1/DEEP-EYE) installed in 2019 to provide macrofauna images at different depths. In detail, the Corsica Channel Mooring is an underwater station at about 450 m depth moored between the islands of Capraia and Corsica, at the sill of the Corsica Channel. Operative since July 1985, it continuously measures ocean currents and thermohaline properties of water masses in predetermined depths, for the monitoring of the surface and the intermediate circulation of the Mediterranean Sea, and exchanges between the two adjacent basins (Tyrrhenian Sea and Ligurian Sea). The site is part of the CIESM Hydro-Changes Programme.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling	Frequency of data transmission

SBE37	Temperature, Conductivity/Salinity, Pressure	-70 m	30 min	ca. every 6 months
GUARD1/DEEP-EYE	Camera for Microfauna	– 340	20 min	ca. every 6 months
SBE37	Temperature, Conductivity/Salinity, Pressure	– 380 m	30 min	ca. every 6 months
ADCP WH Long Range Microplastic Cage	Current Velocity, temperature Quantity of macroplastics	-400 m to -70 m	60 min	ca. every 6 months

Access Provided

Modality of access under this proposal: MoA1/MoA2

UA: 6 months.

Modality used to declare access costs:TA-UC

Support offered under this proposal: A user or a user group shall be given access to the infrastructure for specific experiments, tests of sensors and in-situ validation, or to collect additional data to the ones already acquired by the operator. The access will be remote (the measuring system is implemented by the operator of the installation and the presence of the user group is not required) or partially remote (the presence of the user group is required at some stage e.g. installing and uninstalling user's equipment). The MPLC site is visited twice a year. CNR offer a total of 3 access to the infrastructure. The user will have access to the infrastructure by boat, this service will be arranged by the operator. The modality used to declare access cost is TA-UC (Unit Cost shared with a permanent user). Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).


Service and support

A support team will assist the user group, helping during installing/uninstalling operations of their equipment. The user will have access to the installation by boat or research vessel. The operator will arrange this service. Data will be available in delayed mode at the end of the 6 months access period.

Special 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.).

3.6.8. *Meteoceanographic site S1-GB*

Infrastructure (short name)	CNR ISMAR Observing System (ISMAR OS)	 ISMAR Istituto di Scienze Marine
Installation (short name)	Meteoceanographic site S1-GB (S1-GB)	
Location	North Adriatic Sea, Mediterranean Sea	
Coordinates/Routes	44.7384°N - 12.4526°E	
Bottom depth	21.3 m	
Legal name of organisation	National Research Council of Italy (CNR)	
Country	Italy	
Contact	Mariangela Ravaioli, Francesco Riminucci CNR-ISMAR Via Gobetti 101, 40129 Bologna, Italy Tel: +39 0516398905 mariangela.ravaioli@bo.ismar.cnr.it , francesco.riminucci@bo.ismar.cnr.it	

Description:

S1-GB is located offshore the Po river delta, in a key monitoring point for studying the interactions between the Northern Adriatic and the Po River, experiencing a broad range of oceanographic conditions. The station is made up by an elastic beacon, it consists of an aerial platform at 6.5 m asl, a steel pipe structure, a submerged float and an elastic joint for mooring to the sinker. The system has logging and NRT transmission devices, power systems with continuous voltage 12 and 24 VDC, meteorological station and double winch (connected to the submersed mooring) accommodating oceanographic instrumentation at different water levels (among them CTD probes, dissolved oxygen, chlorophyll, turbidity and CDOM sensors, ADCP). Additional measurements are routinely collected in the site with periodic sampling concerning biology, chemistry, oceanography.

Web site address: http://s1.bo.ismar.cnr.it/perl/s1_home.pl

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
Meteo station	Wind speed, direction and gust Air temperature Atmospheric pressure Humidity	+ 9 m	30 min	60 min

AIRMAR PB200				
CTD SBE37	Sea Temperature, Conductivity/Salinity and Pressure	- 1.5, -18 m	30 min	60 min
SBE 63	Dissolved oxygen	- 1.5, -18 m	30 min	60 min
WetLabs Ecotriplet	Sea Water Turbidity, Fluorescence and CDOM	- 1.5 m	30 min	60 min
Aanderaa DCS-4100	Current speed and direction	- 1.5 m	30 min	60 min

Access Provided

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 user's equipment.

A user or a user group shall be given access to the infrastructure for specific experiments, tests of sensors and in-situ validation, or to collect additional data to the ones already acquired by the operator.

Unit of access(UA): 4-months.

Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).

Service and support

S1-GB will provide the user group with RT/NR data.


The user will have access to the installation by boat or research vessel, this service will be arranged by the operator.

Support teams are established to assist the user group, helping during installing/uninstalling operations of their equipment.

Special Rules

Researchers must provide an insurance statement to reach the S1-GB site. Operation on the elastic beacon is allowed only to the personnel of CNR-ISMAR.

3.6.9. Sicily Channel Observatory-SiCO

Infrastructure (short name)	CNR ISMAR Observing System (ISMAR OS)	 ISMAR Istituto di Scienze Marine
Installation (short name)	Sicily Channel Observatory (SiCO)	
Location	Strait of Sicily, Mediterranean Sea	
Coordinates/Routes	SiCO1: 37.380° N; 11.591° E SiCO2: 37.285° N; 11.5° E	
Bottom depth	SiCO1: 450 m SiCO2: 530 m	
Legal name of organisation	National Research Council of Italy (CNR)	
Country	Italy	
Contact	Mireno Borghini CNR ISMAR Forte Santa Teresa, 19036 Pozzuolo di Lerici (SP), Italy Tel: +39 01871788913 Email: mireno.borghini@sp.ismar.cnr.it	

Description:

SiCO is a twin-mooring system placed in a key area connecting the Eastern and Western Mediterranean Sea. Equipped with current profilers and CTD probes, it continuously monitor surface and intermediate exchange of water masses and properties between the basins. A pCO₂ probe is installed in SiCO1 near the bottom to widen the contribution of the observatory to climate studies and ocean acidification research. The site is part of the CIESM Hydro-Changes Programme.

Web site address: <http://www.ismar.cnr.it/infrastrutture/reti-osservative/catene-correntometriche/il-canale-di-sicilia>

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling	Frequency of data transmission
ADCP RDI 300kHz Sentinel	Current Profiles, Temperature	from -410 to 10 m -410 m for T	60 min	ca. every 6 months
SBE37 + SBE63	Temperature, Conductivity/Salinity, Pressure, Dissolved Oxygen,	-400 m	30 min	ca. every 6 months

Contros Hydro-C CO2	Partial pressure of CO2	-400 m	3600 min	ca. every 6 months
Nortek Continental	Current profiles, Temperature	230 m to 10 m	60 min	ca. every 6 months
SBe56	Temperature,	-80 m	10 min	ca. every 6 months
SiCO2				
Instrument	Measured Parameter(s)	Elevation/Depth	Sampling	Frequency of data transmission
Nortek Continental	Current profiles, Temperature	230 m to 10 m	60 min	ca. every 6 months
SBE37	Temperature, Conductivity/Salinity	373 m	15 min	ca. every 6 months
RDI WH300	Current profiles, Temperature	From 378 m to 230	60 min	ca. every 6 months

Access Provided

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 user's equipment.

A user or a user group shall be given access to the infrastructure for specific experiments, tests of sensors and in-situ validation, or to collect additional data to the ones already acquired by the operator.

Unit of access (UA): 6-months.

The access is offered for multiples of a 6 months period, corresponding to the periodic maintenance operations, namely 6 months, 12 months or 18 months. Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (partially remote access) or in his/her behalf by the access provider (remote access).

Service and support


A support team will assist the user group, helping during installing/uninstalling operations of their equipment. The user will have access to the installation by boat or research vessel, this service will be arranged by the operator. Data will be available in delayed mode at the end of the 6 months access period.

Special 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.).

3.6.10. *Environmental Observatory Littoral (EOL) coastal buoy*

Infrastructure (short name)	CNRS Infrastructure Environmental Observatory Littoral (EOL) coastal buoy (Environmental Observatory Littoral (EOL) coastal buoy)	
Installation (short name)	Environmental Observatory Littoral (EOL) coastal buoy (EOL)	
Location	Location: Bay of Villefranche-sur-mer, Ligurian Sea	
Bottom depth	80m	
Legal name of organisation	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	
Country	France	
Contact	https://data.coriolis-cotier.org/	

Description: CNRS Infrastructure: Environmental Observatory Littoral (EOL) coastal buoy
Location: Bay of Villefranche-sur-mer, Ligurian Sea Website: <http://data.coriolis-cotier.org>
Equipped with a package of sensors (within a seabird mooring profiler) near surface with RT transmission. Solar panels and a cabin large enough to install power hungry instruments and a profiler that allows measurements in the water column (80 m depth). Hourly SBE19 data for T, S, fluorescence, DO at 1.5 m depth. A fixed pH sensor is also deployed.

This autonomous platform is deployed at the mouth of the bay of Villefranche-sur-mer, Ligurian sea. It is moored over rocky bottom depth of 90 m. The rade is a great place to work at sea thanks to its protected position against dominant winds : even if the weather is not good outside, the buoy can be reached and the instrumentation suffer less. As no continental shelf is present in this area, this site is under offshore influences, as well for physical parameters as for biological ones. The EOL buoy is equipped with a package of sensors (within a seabird mooring profiler) near surface with real-time transmission to CORIOLIS and EMODNET (Copernicus, CMEMS). EOL buoy has solar panels and a cabin large enough to install power hungry instruments and a profiler that allows measurements in the water column (80 m depth) several times a day. Its equipment comprises : a meteorological station, a winch dedicated to CTD (temperature and salinity at the moment, extension to others sensors in the future) profiles. Core oceanographic parameters (temperature, salinity, fluorescence, dissolved oxygen) are acquired with a SeaBird SBE19 on an hourly basis at a fixed depth (1.5 m). A fixed pH sensor is also deployed.

Instruments/Sensors

Equipped with a package of sensors (within a seabird mooring profiler) near surface with RT transmission. Solar panels and a cabin large enough to install power hungry instruments and a profiler that allows measurements in the water column (80 m depth). Hourly SBE19 data for T, S, fluorescence, DO at 1.5 m depth. A fixed pH sensor is also deployed.

Access Provided

Modality of access under this proposal: MoA1/MoA2 UA: 8 weeks Modality used to declare access costs: TA-AC


Service and support

Services currently offered: Contributes to the network COAST HF(IR ILICO). Offers validated time series data, and high frequency data are implemented within a long biochemical time series (from Point B site). Support offered under this proposal: This infrastructure is available for researchers to conduct projects on ecosystems dynamics and on the evolution of the Mediterranean Sea within the context of climatic changes and/or anthropogenic forcing.

Special Rules

n/a.

3.6.11. *SL @MM Sea Water Sensing Laboratory*

Infrastructure (short name)	SSL@MM Sea Water Sensing Laboratory @ MIO Marseille (SSL@MM)	 INSU Observer & comprendre
Installation (short name)	SSL@MM Sea Water Sensing Laboratory @ MIO Marseille (SSL@MM)	
Location	Marine Station Endoume, Marseilles	
Bottom depth	2m	
Legal name of organisation	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	
Country	France	

Description

The SSL@MM is part of the MIO, and is situated at the Marine Station, Batiment 4, at 10 m from the sea coast. It is dedicated to the continuous and high frequency analysis of the chemical, biological and biogeochemical properties of the sea water using automated and innovative sensors, and multiplatform integration. The laboratory corresponds to a temperature regulated (22°C) space of 65 m² with bench top all around the walls and individual internet/power connections. Sea water will be pumped from the bay and distributed continuously at a maximal rate of 5 L/min, 1 bar pressure into the laboratory and flow into sinks back to the sea. The pump used for the sea water is a peristaltic pump and the sampling point is at ~2 m depth, 10 m from the coast. The laboratory is chemical free because of sea water flowing back to the sea, all chemical analysis can be done in a nearby laboratory with classical laboratory security handling. The SSL@MM is part of the MIO laboratory where platforms for standard chemical and biological analysis are available but not part of the TNA offer (PACEM PAPB=nutrients, chlorophyll, particulate organic-inorganic carbon, flow cytometry (PRECYM <https://precym.mio.univ-amu.fr/>)) and budgeted apart.

Instruments/Sensors

Access Provided

Days offered for TA: 60 days during the duration of the project.

Service and support

Special Rules

n/a.

3.6.12. COSYNA MOBILE UNDERWATER OBSERVATORIES

Infrastructure (short name)	COSYNA Coastal Observing System for Northern and Arctic Seas Installation: COSYNA Mobile Underwater Observatories (MUO) (MUO)	 Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research
Installation (short name)	COSYNA_MUO (COSYNA_MUO)	
Location	Location: German Bight, North Sea, Flexible locations	
Legal name of organisation	HELMHOLTZ-ZENTRUM GEESTHACHT ZENTRUM FÜR MATERIAL- UND KUSTENFORSCHUNG GMBH	
Country	Germany	
Contact	https://www.hzg.de/institutes_platforms/cosyna/index.php.en	

Description

COSYNA_MUO node system is under development (will be operational in 2020). It will provide power, network connection and server support for the permanent operation of in situ sensor systems (will have 6 underwater pluggable access points for network and power, and a standard sensor carrier with an ADCP, a CTD plus Chl-a fluorescence, O2 and turbidity sensors).

Instruments/Sensors

A standard sensor carrier with an ADCP, a CTD plus Chl-a fluorescence, O2 and turbidity sensors

Access Provided

Modality of access under this proposal: MoA1/MoA2. UA:2 weeks. Modality used to declare access costs: TA-AC


Service and support

Services currently offered: All data from the COSYNA nodes are delivered in RT or NRT to the COSYNA data server open to the public via free internet connection. Support for preparing the instrumentation; service the instrumented node, support diving for installation and recovering. A “virtual computer” is also provided to the user for full access to the instruments installed underwater.

Special Rules

n/a.

3.6.13. MONIZEE (IH)

Infrastructure (short name)	MONIZEE (MONIZEE)	
Installation (short name)	MONIZEE (MONIZEE)	
Location	NW Portugal (bottom depth 1600 m), W Portugal (bottom depth: 2000 m), W Portugal (bottom depth: 90 m), S Portugal	
Coordinates/Routes	1. 41°08.9' N/009°34.9' W 2. 39°30.9' N/009°38.2' W 3. 39°33.6' N/009°12.6' W 4. 36°23.90' N/ 008°04.10' W	
Bottom depth	90m - 1334 m	
Legal name of organisation	INSTITUTO HIDROGRAFICO	
Country	Portugal	
Contact	Website: www.hidrografico.pt	

Description

The multiparametric buoys network that is part of the MONIZEE monitoring infrastructure started to be implemented in 2009. It presently comprises 4 Fugro-Oceanor Wavescan buoys, 3 of each located along the Portuguese continental slope, from the Gulf of Cadiz area to the north-western Portuguese margin, and 1 located at the mid-shelf in the area of Nazare Canyon. The multiparametric buoys provide hourly measurements of meteorological parameters, waves, water temperature and currents at several depths for typical periods of operations of 6 months between maintenance actions. Near surface fluorometry, dissolved oxygen and turbidity are also available for shorter periods after each maintenance action. Part of the data is transmitted by satellite to Instituto Hidrografico and disseminated through the IH web page. The total data sets are downloaded from each buoy during the maintenance periods. Both the real-time and archived data will be accessible to users through the HIDROGRAFICO+ portal (proposed as a service to JERICO-S3 Virtual Access). The infrastructure provides a unique view of the southwestern European coastal ocean area and of the interactions between the European margin, the North-western African margin, the mid North Atlantic basin and the Western Mediterranean which can support studies of biological connectivity, contaminant dispersion and slope processes among others. It is a key component of the monitoring capacities that contribute to the Iberian Peninsula Regional Integrated Research Infrastructure.

Instruments/Sensors

Access Provided

Modality of access under this proposal: MoA1/MoA2.

UA:day

Modality used to declare access costs: TA-CB.

Service and support


Services currently offered: Possibility of installing and operating their own sensors in the buoys, either for research purposes or for testing of new sensor technologies. Support offered under this proposal: Evaluation of the feasibility and adaptation requirements; Adaptations to accommodate sensors/samplers. Planning the installation/recovery and additional measurements.

Installation and Recovery of sensors/samplers. Support in the program of additional measurements. Access to complimentary data..

Special Rules

n/a.

3.6.14. SMARTBAY BUOY

Infrastructure (short name)	SmartBay (SMARTBUOY)		<i>Foras na Mara</i> <i>Marine Institute</i>
Installation (short name)	SMARTBUOY (SMARTBUOY)		
Location	Galway Bay, Ireland, Atlantic Ocean		
Coordinates/Routes	53.22762°N - 9.2611°W		
Bottom depth	23 m (Chart Datum)		
Legal name of organisation	Marine Institute		
Country	Ireland		
Contact	Conall o Malley Marine Institute Marine Institute Building, Renville, H91R673 Oranmore, Ireland Tel: +353 (0)91 387545 Email: conall.omalley@marine.ie		

Description

SMARTBUOY is an autonomous data buoy used by the Marine Institute for testing environmental and meteorological sensors and to efficiently collect metocean time series.

All data is transferred via a variety of wireless communication options and onto users through an online data portal or specialized access.

Different mooring designs are adaptable to any specific testing environment; the buoy allows for easy integration of sensors and instruments into the available power and data transmission facilities, with deployment in air, at the ocean surface or deeper in the water column.

Instruments/Sensors

Instrument	Measured Parameter(s)	Elevation / Depth	Sampling	Frequency of data recovery
Vemco VR2C	Fish tag detector	Surface	Continuous	On detection event
Datawell	Wave characteristics (statistical and spectral)	Surface	Continuous	3 min

Airmar	Wind velocity, air temperature, air pressure	Surface	Continuous	1 min
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Access Provided

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 user's equipment.

Unit of access (UA): month.

Service and support

The whole infrastructure for both SBI CPO and SMARTBUOY installations includes the following data services: acquisition, storage, normalisation, presentation and visualisation and data standardisation. The infrastructures are being used by several Irish research bodies, universities and companies in research and development projects. Testing and validation of novel devices or instruments will typically allow devices to move up TRLs 4 to 7. In addition, SMARTBUOY currently offers: power and data communications to near surface or atmospheric devices; pre-deployment integration testing; dedicated operational team (bench testing, deployment, operations and maintenance, recovery of the sensor/equipment); data processing support; device deployment in a marine environment; real-time data transmission to shore.


Users of SMARTBUOY will be offered a high-quality, end-to-end service including:

- 1) Project specific ICT team for data acquisition and data transmission support;
- 2) Real-time data transmission and visualization through a dedicated and secure log-in via the SBI online data portal. All data transmitted and visualized via SBI is encrypted to ensure client data security. A SOS (OGC compliant) web service is also available for automatic data retrieval.

Special Rules

n/a.

3.6.15. MAMBO

Infrastructure (short name)	MAMBO Miramare Buoy (MAMBO Miramare Buoy)	
Installation (short name)	MAMBO Miramare Buoy (MAMBO Miramare Buoy)	
Location	Location: Trieste, Italy	
Legal name of organisation	ISTITUTO NAZIONALE DI OCEANOGRAFIA E DI GEOFISICA SPERIMENTALE	
Country	Italy	
Contact	Caterina Fanara; cfanara@ogs.trieste.it ; Fabio Brunetti – fbrunetti@ogs.trieste.it	

Description

The MAMBO Miramare buoy site offers a multidisciplinary pilot platform suitable for the testing and experimentation of sensors and instrumentation. The buoy is easily accessible from the land and moored in a protected area, it has its own power supply by means of solar panels and batteries. The buoy is equipped with the following instrumentation with data in near real time:

- weather station R.M Young Company (wind speed and direction, temperature, pressure and humidity)
- system for the study of the carbon cycle, placed at a depth of 1.5m and consisting of pCO₂ Pro-Oceanus sensor, Ph SeaFET sensor, CT SBE37-ODO with optical oxygen sensor.
- SBE16 multi-parameter probe, located at a depth of 10 m, consisting of CTD, dissolved oxygen sensor, ph, fluorescence, turbidity and irradiance;
- SBE16 multiparameter probe at a depth of 15 m consisting of CTD, dissolved oxygen sensor, and ph.

The MAMBO buoy of Miramare has served as a testing laboratory for other buoys, variously configured, and for testing oceanographic sensors and instruments. The infrastructure is used for physical oceanography, chemical and biogeochemical (marine acidification) studies.

Instruments/Sensors

The MAMBO Miramare buoy is equipped with weather station, carbon cycle system pCO₂ Pro-Oceanus sensor, Ph SeaFET sensor, CT SBE37-ODO with optical O₂ sensor; SBE16 multi-parameter probes.

Access Provided

Modality of access under this proposal: MoA1/MoA2.

UA:day

Modality used to declare access costs: TA-UC

Service and support

The installation is available for researchers to do research on physics , chemistry, and biogeochemistry. It is currently funded by OGS and and together with the nearby site C1 is an integral part of the L-TER and ICOS networks.

The services offered are:

- Installation of the instrumentation object of the TNA.
- Power supply, if required.
- Use of the data acquired by the instruments with which the buoy is equipped.
- Access to the buoy with boat and technical staff.
- Technical support with our staff for all installation operations required.
- Support and assistance from our scientific staff in the evaluation of installation methods and in the evaluation of acquired data.

Technical support for all installation operations required; Support and assistance from our scientific staff in installation methods and in the evaluation of acquired data. Support offered under this proposal: Technical support for instrument deployment planning, interfacing with observatory, and access to RT instrument data after deployment. Quality control of data is offered.

Special Rules

n/a.

3.6.16. MOW1 BENTHIC LANDER

Infrastructure (short name)	MOW1 Benthic Lander (MOW1 Benthic Lander)
Installation (short name)	MOW1 Benthic Lander
Legal name of organisation	INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE
Country	Belgium
Contact	Website: https://odnature.naturalsciences.be/belgica

Description

- 1) Benthic lander parameters measured are current velocity, S, T, SPM concentration, and Particle Size Distribution (PSD), fluorescence and turbulence.
- 2) RV Belgica with a AUMS (automatic underway measuring system) and hull mounted ADCP.

Instruments/Sensors

Website: <https://odnature.naturalsciences.be/belgica>

Access Provided

Modality of access under this proposal: MoA1/MoA2.

UA: day

Modality used to declare access costs: TA-UC

Service and support

Services currently offered: Over the past years, the data have been used by around 10 national and international users. The parameters for the water samples are included in the Belgian Marine Data Centre (BMDC) and are made available through SeaDataNet.

Support offered under this proposal: Technical support include support for instrument deployment and sampling at the three stations and underway using the research vessel, and support in laboratory for analysis.


Special Rules

n/a.

3.7.Supporting Facilities

Supporting Facilities					
Access provider	Country	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
IFREMER	FR	METLAB	METLAB	Week (7 days)	1
HCMR	GR	POSEIDON	Cal Lab	Week	2
SYKE	FI	MRC-LAB	MRC_LAB	Day	21

3.7.1. Ifremer Metrology Laboratory

Infrastructure (short name)	Ifremer Metrology Laboratory (METLAB)	
Installation (short name)	Ifremer Metrology Laboratory (METLAB)	
Location	Plouzané, France, Atlantic Ocean	
Coordinates/Routes	48.357°N, 4.558°W	
Legal name of organisation	Institut Français de recherche pour l'exploitation de la mer (IFREMER)	
Country	France	
Contact	Florence Salvetat Ifremer REM/RDT/LDCM Centre de Brest – CS 10070 29280 PLOUZANE – FRANCE Tel: +33 (0)2 98 22 49 21 Email: Florence.salvetat@ifremer.fr	

Description:

The Ifremer metrology laboratory is in charge of the calibration of the oceanographic sensors used by Ifremer scientists and it also provides calibrations for external customers. The metrology laboratory deals with the following parameters: temperature and pressure (Cofrac accreditation for these two parameters), conductivity/salinity, dissolved oxygen, turbidity, pH and fluorescence. The laboratory is equipped with high quality reference devices (fresh water and seawater calibration baths, standard platinum resistance thermometers, direct current resistance comparator bridges, fixed point cells, gauge pressure balance, reference salinometer, reference materials for fluorescence and turbidity calibrations and spectrophotometric PHT bench).

Web site address:

http://www.ifremer.fr/rd_technologiques/Plates-formes-technologiques/Metrologie

Instruments/Sensors

Parameter	Range	Uncertainty
Temperature	-1,5°C to +40°C	$\pm 0,07^{\circ}\text{C}$
Pressure	100 kPa to 4MPa 2 MPa to 80 MPa	$\pm (200\text{Pa} + 1,3.10^{-4} \cdot \text{Pr})$ $\pm (1200\text{Pa} + 1,3.10^{-4} \cdot \text{Pr})$
Salinity	2 to 40	$\pm 1.10^{-2}$
Turbidity	0 to 4000 FTU	+/- 5% of full scale
pH	4 to 10	$\pm 0,02$
Fluorescence	Depend of sensor technology to be calibrated	+/- 5% of full scale

Access Provided

In person/hands-on: the presence of the user group is required/recommended during the whole operation period

Unit of access (UA): week (5 days of 8 hours)

Quantity of access available for the 3rd Call: 5 UA=5 weeks.

Users can apply for a minimum access duration of 1 week (1 UA), for the maximum duration of 5 weeks (5 UA), or for intermediate access duration (n UA, n=2,3,4).

Applications are solicited for using the calibration laboratory in combination with one or all the other installations open to the TA program, both by IFREMER and other partners.

Service and support


The metrology laboratory provides: sensor calibrations, metrology trainings, audits and guidance for Ifremer laboratories or external collaborators and customers, metrology expertise and studies in the framework of national, European and international projects (Aquaref, Jerico, Argo, ENV05 Ocean JRP, ...).

Visiting researcher will be given access to the laboratory facilities, experimental areas for doing calibration (conductivity/salinity, dissolved oxygen, turbidity, pH and fluorescence). An engineer and a technician will be fully dedicated to the service for TA.

Special Rules

To be verified with the facility provider.

3.7.2. POSEIDON

Infrastructure (short name)	POSEIDON Monitoring, Forecasting and Information System for the Greek Seas (POSEIDON)	
Installation (short name)	Poseidon Calibration Lab (PCL)	
Location	Heraklion, Crete, Mediterranean Sea	
Coordinates/Routes	35.335°N - 25.281°E	
Legal name of organisation	Hellenic Centre for Marine Research (HCMR)	
Country	Greece	
Contact	Petihakis George Institute of Oceanography HELLENIC CENTRE FOR MARINE RESEARCH (HCMR) Thalassocosmos Gournes Pediados P.O. Box 2214 HERAKLION CRETE GR 71 003 GREECE Tel: +30 2810 337755 Fax: +30 2810 337822 GSM: +30 6977 916206 E-mail: gpetihakis@hcmr.gr, gpetihakis@gmail.com	

Description:

The Calibration Laboratory, PCL, is part of POSEIDON, the operational marine monitoring, forecasting and information system for the Greek Seas. It is based at the HCMR Thalassocosmos complex in Crete and is equipped with a special designed large calibration tank, two smaller glass tanks and a number of reference sensors and equipment for temperature, salinity, chlorophyll-a, turbidity and dissolved oxygen sensors calibration.

The support team consists of the HCMR technicians and scientists who can perform a wide range of sensor calibrations (Temperature, Salinity, Oxygen, Chlorophyll, Turbidity).

Instruments/Sensors

Instrument	Measured Parameter(s)	Range	Accuracy	Resolution
Deep Ocean Standards Thermometer SBE 35	Temperature(ITS-90)	-5 to +35 °C	0.001 °C	0.000025 °C
AutoSal 8400A	Conductivity Ratio (Salinity)	0.005 to 42 ppt	0.003 ppt	0.0002 ppt

A variety of sensors (Seabird 37 SIP, Aanderaa 3919B, Aanderaa 3975) are used in order to monitor the measurement parameters inside the calibration tanks during the experiments. For the calibration of the DO sensors samples are collected during the experiment and analysed later using the Winkler methodology. Regarding fluorometer and turbidity sensor the sensors are calibrated against known concentrations and particles dimensions of reference solutions.

Access Provided

In person/hands-on: the presence of the user group is required/recommended during the whole operation period

Unit of access (UA): week (5 days of 8 hours)

Quantity of access available: 4 UA=4 weeks.

Access to the Calibration Lab is daily all year round.

The scientific and technical personnel of POSEIDON will carry out all operations, while training courses will be given on both hardware and software.

Applications are solicited for using the calibration laboratory in combination with one or all the other installations open to the TNA program, both by HCMR and other partners

Service and support

The access services offered by the POSEIDON system includes:

Calibration laboratory: PCL can support relevant activities for a wide range of sensors (Temperature, Salinity, Oxygen, Chlorophyll, Turbidity) providing state-of-the-art calibration services.

Field experiments: Calibrated sensors can be tested in the field.

The support team consists of the HCMR technicians and scientists, who regularly prepare the instrumentation, perform field experiments, service and maintain the instruments and assist the users during the experiments in the calibration facility.

Special Rules

Requests for calibration services must be made at least 3 months in advance.

The user should provide the measured parameters range of the area where the sensors will be deployed.

3.7.3. SYKE MRC-LAB

Infrastructure (short name)	SYKE Marine Research Centre Laboratory (SYKE MRC-lab)	
Installation (short name)	SYKE Marine Research Centre Laboratory (SYKE MRC-lab)	
Location	Helsinki, Finland, Baltic Sea	
Coordinates/Routes	60.2038°N - 24.9616°E	
Legal name of organisation	Finnish Environment Institute (SYKE)	
Country	Finland	
Contact	Jukka Seppälä Finnish Environment Institute Erik Palmenin Aukio 1, 00560 Helsinki, Finland Tel: +358 295 251 631 Email: jukka.seppala@ymparisto.fi	

Description:

SYKE MRC-lab offers space and instrumentation for testing, validating and calibrating various optical sensors, like LED fluorometers, FRRF fluorometers, absorption meters, turbidity meters, particle size analysers, and imaging in-flow systems.

It has up-to-date basic and advanced laboratory facilities, including flow cytometer, FlowCAM, microscopes, spectrofluorometers, plate readers, spectrophotometer with integrating sphere, FRRF fluorometers, controllable LED panels, nutrient analysers and isotope laboratory.

It host SYKE MRC phytoplankton culture collection, including hundreds of species strains, which can be used in instrument comparison and validation. Climatic growth chambers and controllable cultivation units (0.5 – 300 L) are available for phytoplankton growth experiments. There is a weekly access to seawater samples taken from various locations from the Baltic Sea. Instrument tests and deployments can be performed together within SYKE Algaline TNA.

Web site address: <http://www.syke.fi/en-US>

Instruments/Sensors

Facility/Instrument	Details
Phytoplankton cultures	Hundreds of strains, representing different size classes and pigment groups. Suitable for

	calibration, validation or testing optical sensors.
Culturing facilities	Controllable growth chambers and cultivation units for growth experiments, used to cultivate phytoplankton cells, in different environmental conditions, to obtain testing materials for optical sensors.
Online measuring systems for pH, light, nutrients, temperature, and control systems for pH, light intensity and spectra, and temperature	Instruments to control and follow experimental units, to be used in testing optical sensors
Spectrophotometer with integrating sphere (Perkin Elmer 650 UV/Vis); Spectrofluorometer, (Agilent Cary Eclipse); Spectroradiometers, (Trios Ramses ACC-VIS)	Reference instruments and materials for optical sensor tests
FlowCAM, flowcytometer Partec Cube 8, microscopy facilities	Reference instruments for optical sensor tests
FRRF fluorometers (various models from PSI, Chelsea)	Reference instruments for optical sensor tests
Isotope laboratory	Reference measurements for optical sensor tests.

Access Provided

In person/hands-on: the presence of the user group is required/recommended during the whole operation period.

Unit of access (UA): 8 hour day

Users may bring their own instrumentation to be tested along annual calibration workshop, or testing facilities are modified according to their needs. Access duration corresponds to the period of installing, operating and un-installing a measuring system by the users (in person/hands-on access) or in his/her behalf by the access provider (remote access). Applications are solicited for using the Marine Research Centre Laboratory in combination with one or all the other installations open to the TNA program, both by SYKE and other partners.

Service and support

SYKE MRC-lab offers possibilities for testing optical sensors with various types of natural samples and phytoplankton cultures, and benchmarking the results against reference materials and methods. It offers facilities and technical and scientific support for studying effects of light, nutrients, temperature, salinity and pH on optical properties of phytoplankton, as required when validating optical sensors. Users may also participate in annual calibration workshops.

SYKE support team consists of technicians and scientists regularly working with optical instruments and reference measurements. It provides assistance to users during testing of new instruments (experimental setups, technical issues, lab work assistance, safety). It assists in the selection of reference methods and instrumentation and measuring protocols if needed and in analysing the data from TNA instruments.


Special Rules

During all visits, use of TA instrumentation will be done under guidance of SYKE support team.

3.8.Special Equipment

Special Equipment					
Access provider	Country	Name of infrastructure	Short name	Unit of access (UA)	Access in UA
CNRS	France	Sediment Profile Imager	SPI-H	week	4

3.8.1. Sediment Profile Imager (SPI-H)

Infrastructure (short name)	Sediment Profile Imager (SPI-H)	
Installation (short name)	Sediment Profile Imager (SPI-H)	
Location	UMR EPOC, Station marine d'Arcachon, France, Atlantic Ocean	
Coordinates/Routes	44.658° N - 1.161°W	
Legal name of organisation	Centre National de la Recherche Scientifique (CNRS)	
Country	France	
Contact	Antoine Gremare UMR 5805, EPOC Station marine d'Arcachon, 2 rue du Pr Jolyet, F33120 Arcachon, France Tel:(33) 6 26 92 61 36 Email: antoine.gremare@u-bordeaux.fr	

Description:

SPI-H allows for the in situ acquisition of sediment profile images in cohesive sediments, which constitutes a sound and cost-effective alternative to classical faunal analyses in assessing the ecological quality of benthic habitats (Labruno et al 2012, Romero et al 2013). This piece of equipment exists in two versions: (1) for shallow bottom (i.e., down to 30 m) waters, which can be operated from small ships, and (2) for deep (i.e., down to 1000 m) waters, requiring the use of a large oceanographic ship.

Web site address: <http://spiarcbase.epoc.u-bordeaux1.fr/>

Instruments/Sensors

Instrument	Measured Parameter(s)	Depth of measurement	Sampling	Frequency of data recovery
Sediment Profile Imager (SPI-H)	In situ sediment profile images	0-1000 m	10 images/station	Once/station

Access Provided

In person/hands-on: the presence of the user group is required/recommended during the whole operation period.

Unit of access (UA): week

Access duration corresponds to the period of installing, operating and un-installing the measuring system.

Applications are solicited for using the Sediment Profile Imager in combination with one or more observing systems open by the JERICO NEXT consortium to the TNA program.

Service and support

The support includes shipping to the location of use, and assistance for the deployment of the profiler as well as for the acquisition of images and their transfer to a microcomputer by an experienced staff. The support also includes advices for the “manual” processing of the acquired images and their ecological interpretation by this staff.

Special Rules

To be verified with the facility provider.

4. OUTREACH, DISSEMINATION AND COMMUNICATION ACTIVITIES

The updated Transnational access Catalogue for JERICO-S3 was uploaded to the JERICO website superseding previous iterations of the Catalogue list with new platforms and facilities. The Launch of the TA funding call was announced by a press release issued by the Communications team and released via the website and JERICO-RI Social media channels. The broader consortium publicised the TA call through various national and International fora including established ERICs like EMSO, Aquacosc, & Lifewatch. The Workpackage leader continued to liaise closely with the communications team throughout the call - which was extended due to Covid 19 impacts. A final press release notification was issued prior to the closing of the call to alert potential applicants to make their submissions.

5. CONCLUSIONS

JERICO-S3 is a research infrastructure project funded by Horizon 2020 Programme of the EU that provides European public and private scientific sectors with Transnational Access to

a wide range of state-of-the-art marine coastal observation infrastructures, special equipment and facilities.

The catalogue of infrastructures involved in the Transnational Access activities of JERICO-S3 are published in paper form (this deliverable) and as an interactive map on the official website of the project <https://www.jerico-ri.eu/ta/jerico-facilities-in-ta/>.

The website allows the visualisation of the locations of all the facilities and navigation to obtain information, including access service offered to users by each infrastructure. This is the first element of the TA web page which will be regularly updated during the duration of JERICO-S3 for disseminating useful information for accessing the coastal observatories managed by the JERICO-S3 Consortium and will later be updated to include preliminary results and reports of the hosted TA user projects.

6. ANNEXES AND REFERENCES

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