Joint European Research Infrastructure network for Coastal Observatory – Novel European eXpertise for coastal observaTories - **JERICO-NEXT**

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Work Package Title	WP 8
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Approvals				
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Key Acronyms

WP:	Work Package
VIs:	Virtual Infrastructures
VIPs:	Virtual Infrastructure Providers
VA:	Virtual Access
AI:	Availability Indicator
VI:	Visibility (related to availability indicator)
AC:	Accessibility (related to availability indicator)
PE:	Performance (related to availability indicator)
NorFerry:	Ferrybox installations operating in the °Southern Baltic, North Atlantic and Arctic waters from 54 ° to 78 ° North
CEFAS-DATA-HUB:	Marine environmental monitoring data in UK Coastal Waters and North Atlantic seas
Alg@line:	Real time algal monitoring in the Baltic Sea
ÜTO:	Utö Atmospheric and Marine Research Station
SHARK:	Swedish Marine environmental monitoring data
LiSO-HFR:	Ligurian Sea Radar System
POSEIDON:	Monitoring, Forecasting and Information System for the Greek Seas
EOL:	Environment Observable Littoral
NOMOS:	Bulgarian National Operational Marine Observing System
SOCIB:	Balearic Islands Coastal Observing and Forecasting System
BHFR:	Radar system of the Basque Operational Observing Network
SPI-S:	Sediment Profile Imagery Software
MONICAN:	The Nazare Canyon Observatory
Coastal Coriolis:	French Coastal Ocean Observing System

1. Executive Summary

The primary objective of Work Package (WP) 6 is to provide free of charge “virtual access” to data and information from in situ systems such as HF radar, FerryBox and fixed platforms but also other information from discrete samplings or archives. The data and information access will enable scientists to carry out high quality research using data from a variety of coastal observation systems. It will also promote the improvement of existing services and potentially the development of new services. Improvement of existing services may result from feedback from a variety of new users of services provided by the JERICO-NEXT programme. For example, access to in situ data can improve calibration and validation of numerical models and also provide sea truth data for calibrating the information derived from remote sensing. New services may result from users developing new datasets processing tools, systems and algorithms (e.g. development of algorithms for processing data from HF radars) in order to make best use of data derived from JERICO Virtual Services. WP6 will provide evidence of the existing client community and their needs for scientific services. In this deliverable (D8.13), the 15 Virtual Infrastructures (VIs) were described according to 1) the frequency, time and origin of the visitors for each VI collected by a standardised template and 2) visibility, accessibility, and performance indicators calculated 6 months after the first assessment of the VI’s An expert panel of 3 User Panel members (external to the project) and 3 partners will assess the 15 VI’s using the deliverable D8.13, in order to prioritise and promote the future development of the JERICO infrastructure.

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2. Introduction

In the last decades, marine observing systems have been implemented in coastal and shelf seas around Europe. Their purpose is mostly to answer local/regional monitoring and oceanographic research demands, but heterogeneity of monitoring methods and geographical dispersion often limit development of a coherent network. Indeed, observations are often driven through short-term research projects, therefore the sustainability of observing systems is not guaranteed. One of the main challenges for the European marine research community is now to increase the consistency and the sustainability of these dispersed networks and infrastructures by integrating their future within a shared pan-European framework. The aim of JERICO-NEXT, as a network of coastal observatories, is to ensure regular and standardised observations to provide long term time-series of high-quality biogeochemical, physical and biological data. Therefore, combined operational capabilities, innovation and sustainability for high quality European networking research are needed. In the project, Work Packages 5, 6 and 8 aim to provide robust and high-quality information to decision makers in governments and agencies, private sector and civil society for improving or promoting services. The environmental information consists on high frequency and in real-time data provided as well as single points and archives. They are freely available with or without registration from the institute websites, the JERICO-NEXT portal and from EMODnet data systems (physical, chemical and biogeochemical) as well as other data management infrastructures, e.g. Copernicus Marine or EuroGOOS ROOS data portal.
In JERICO-NEXT WP8, a template has been developed to periodically report (D8.12) on the activity of the 15 VI's in WP6 (Virtual Access). This template presents statistics on the visits of the VI's, number of downloaded data sets, geographical distribution of the visitors, and, whenever possible, the downloading activity according to the sector of activity of the users, information/statistics on scientific outcomes (publications, patents, etc.) acknowledging the use of the infrastructure for the first 18 months of the project. Additionally, availability indicators i.e. a methodology to assess the degree to which the datasets are discoverable, accessible, ready for use, and obtainable (either directly or indirectly) were calculated for the general Virtual Access activity in JERICO-NEXT after 6 months of the first assessment, providing an understanding of the readiness and service performance of the infrastructure providing access to data (a detailed description will be found in deliverable 5.16: http://www.jerico-ri.eu/download/jerico-next-deliverables/JERICO-NEXT-Deliverable-5.16_V2.pdf) to the expert panel. The expert panel will need to assess and comment on the activities of each VI for the first 18 months of the project by considering:

1. their capability to give the information requested by the European commission,
2. their actions already performed assessed by availability indicators
3. their plan in the future for promoting their VI in the European Coastal Observatory JERICO-NEXT infrastructure.

3. The virtual access providers in JERICO-NEXT

The table 1 describes the 15 virtual infrastructure providers and 15 virtual infrastructures.

Id	VI provider	VI Name	VI Primary Link
1	NIVA	NorFerry	http://www.niva.no/en/miljoedata-paa-nett/ferrybox-og-satellittdata
2	HZG	COSYNA	http://www.cosyna.de

3	CEFAS	CEFAS DATA HUB	https://www.cefas.co.uk/cefas-data-hub/
4	FMI	ÜTO	http://swell.fmi.fi/Uto/latest.html
5	SMHI	SHARK data set	http://www.sharkdata.se/
6	SYKE	SYKE-Alg@line	http://www.syke.fi/en-US/Research__Development/Research_and_development_projects/Projects/Real_time_algal_monitoring_in_the_Baltic_Sea_Algline
7	CNR-ISMAR	LiSO-HFR	http://radarhf.ismar.cnr.it
8	HCMR	POSEIDON	http://www.poseidon.hcmr.gr
9	SOCIB	SOCIB	http://www.socib.es
10	CNRS	Environment Observable Littoral	http://www.obs-vlfr.fr/data/view/eol/surface/ http://www.obs-vlfr.fr/data/view/eol/ctd/ http://www.obs-vlfr.fr/data/view/eol/meteo/buoy/
11	IO-BAS	NOMOS	http://www.bgodc.io-bas.bg
12	AZTI	BHFR	http://www.euskoos.eus/en/basque-ocean-meteorological-network/high-frequency-coastal-radars/
13	CNRS	SPI-S (Sediment Profile Imagery Software)	https://spiarcbase.epoc.u-bordeaux1.fr/
14	IH	MONICAN	http://monican.hidrografico.pt/
15	IFREMER	Coastal Coriolis	http://www.coriolis-cotier.org/

Table 1: List of the Virtual Infrastructures providers, names and links of Virtual Infrastructures

The VI's are characterised by the high diversity of platforms available delivering physical, chemical biological parameters. The platforms can be divided in 6 categories (Ferry / ship; buoy/drifter, HF Radars, station, gliders, cables) and the most common parameters measured are temperature, salinity, chlorophyll / fluorescence, and turbidity. Only 4 virtual infrastructures propose biological data on plankton, invertebrates, fish, but also mammals (seals) and primary production (dataset from Fast Repetition Rate Fluorometry). Most of the virtual infrastructures present real-time measurements but the users can also have access to data from discrete samplings and a sediment Profile Imagery Software (SPI-S). The 15 VI's are described in more detail on the JERICO-NEXT website: http://www.jerico-ri.eu/virtual-access.

4. Survey on the JERICO-NEXT VA

4.1. The periodic assessment template.

In the first assessment report (D8.13 and D6.1), the data holders in WP6 have been asked to complete the template for periodic assessment (D8.12) for the first 18 months of the project. The template consists on characterising:

1. general information on the date when the VI was created, the parameters collected, the mode of collection (real-time, delayed time, archives), if the data from the VI were already in a Pan European data repertory.
2. the flow of environmental information on the data portal for each partner by giving the number of visits, and data downloaded, the country of origin for the visitors, the identification of the users by categories (science, policy, industry and society) when possible. To obtain the information, it has been asked to each virtual access provider during the General Assembly in March 2017 in Helsinki to install a tool to deliver the statistical information required for the virtual access assessment.

3. a demonstration of the use of their environmental information in scientific publications, conferences, with the policy makers, with the private sector and for societal benefits.
4. a summary of their activity and the person months already used during the first 18 months of the project as well as their plan for the next 18 months of the project.

4.2. Application of the availability Indicators (AI's) on the VAI's.

The survey has focused on the data provided by each VI: how to see them on the portal indicated by each provider (visibility), how to access them (accessibility), and how fast the process is to take possession of them (performance). The applied methodology used "availability" indicators (AI), which indicate the degree to which the datasets are ready for use and obtainable from the JERICO-NEXT VI's (main website: *www.jerico-ri.eu* and under EMODnet-Physics: www.emodnet-physics.eu/jerico) The availability indicators (AI's) provide an understanding of the readiness and service performance of the infrastructure providing access to data. The three classes of availability indicators are:

1) **Visibility (VI)**. This is the ability to quickly access the appropriate site delivering the desired datasets and/or to reach the data provider when needed, especially for a non-expert. The Visibility Indicator also considers the possibility of identifying and quick accessing the appropriate site for the required data sets. According to the JERICO-NEXT DOW, the VA providers (will) make data more easily accessible, publicising the availability of the data as well as broadcasting information through professional networks e.g. EuroGOOS Regional Observing Systems, EMODnet portals, etc. The VI indicator will then consider the EuroGOOS ROOS portals, Copernicus Marine Environmental Marine Service (CMEMS), the EMODnet portals, and other infrastructure if pertinent. This indicator also provides important information to JERICO-NEXT WP8 that should develop the appropriate mechanism to publicise the offered VAI's services.

2) **Accessibility (AC)**. Accessibility conditions play a fundamental role in the capacity of an infrastructure to support efficiently a multi-node distributed system, as well as to feed different VRE's / VI's. These include:
   - the services made available: manual ordering, on-line downloading, on-line downloading and advanced services (services or software to download for processing and viewing data)
   - the data policy: restricted, accessible under moratorium, unrestricted / open and free
   - the cost basis
   - the formats and semantic conventions: proprietary or standards and de facto standards (e.g. ODV), ISO/OGC compliant (WMS, WFS, WCS, NetCDF CF…) avoiding preliminary processing
   - the interoperability of the on-line services (OGC standards…).

   This indicator also considers the possibility, for non-expert users, to understand the retrieval model status.

3) **Performance (PE)**. This is the ability of a system to keep operating over time and to meet real time operational conditions. This is related to service performance and includes:
   - ***Reliability***: i.e. the ability of a system to keep operating over time. It means the service Website giving access to the services and the service (to request data) operates correctly and either does not fail or reports any failure to the service user for compensation. This quality element would require tests through time difficult to organise in sufficient numbers for all the sites in the framework of this study. Other approaches are highly dependent on the user perception of information such as the credibility of the data provider. We propose to base this evaluation on the existence of a service contract (Service Level Agreement) or commitment or charter.

- ***Responsiveness***: It is related to response in window time frame (how long it takes to process a request), throughput (how many requests overall can be processed per unit of time), or timeliness (ability to meet deadlines, i.e., to process a request in a deterministic and acceptable amount of time). Based on previous studies (SeaDataNet, EMODnet Mediterranean Sea Check Point), distinction must be done between: immediate i.e. < 15mn (on-line downloading), less than 3 hours, less than 24 hours, less than 1 week, more. Note the degree of satisfaction can vary from one application to another and from one parameter to another.

For each AI class more sub-specific-indicators are defined as follow:
Visibility is the ability to identify and quickly access the appropriate site delivering the desired data sets. It is the ability for the user (not only expert user) to include data source into the web and the identified integrators of the VI's infrastructure. More specifically the evaluation is going to consider if the (data from the) VIs are:

1. present on the JERICO-NEXT website
2. listed on the first page of a google search for appropriate search terms
3. present on the EuroGOOS ROOS data portal
4. present on the EMODnet Physics portal
5. present in CMEMS

For each of the listed points two indicators will be considered:

AI.VI.1	VI and VI data Visibility
Meaning	Can VI or VI datasets be found easily?
evaluation	0/Low - dataset not listed in the catalogue - dataset not available in the infrastructure 1/Medium - listed generically, - no specific link to the VI data (either the VI or the data) 2/High - clearly listed and easily accessible (VI is mentioned, VI data are clearly available)
AI.VI.2	Term of use and citation
Meaning	Is the VI presenting a "terms of use" and "citation info" of the original provider or VI?
	0/Low - the VI is not presenting any information 1/Medium - information available but incomplete (e.g. the integrating infrastructure is not clearly citing the VI or the provider) 2/High - information available and refers to either the VI or the provider

Table 2: List of availability indicators and scoring system to assess the visibility of the Virtual Infrastructures

Accessibility is the ability of users, including non-experts, to understand how to retrieve / download data from either the VI or the integrating infrastructure.

AI.AC.1	Data Access
Meaning	Is the data accessible? Is any restriction applied?

	0/Low - data restricted, partially restricted 1/Medium - open and free data - accessible under authentication 2/High - open, free and unrestricted
AI.AC.2	Data Format
Meaning	Which data format are available?
	0/Low - custom format 1/Medium - csv file with comments and labels 2/High - NetCDF, ODV, other standard formats
AI.AC.3	Interoperability Services
Meaning	Which interoperability service are available?
	0/Low - no interoperability service 1/Medium - file list on request, web table on request 2/High - Web services, OGC WFS, OGC WMS, THREDDS,

Table 3: List of availability indicators and scoring system to assess the visibility of the Virtual Infrastructures

Performance indicates the ability of the system to keep operating over time (Reliability) and the timing of service delivery (Responsiveness). For the study, only the Responsiveness was considered.

AI.PE.1	Ability to access and download data in a given time window
Meaning	How responsive is the delivery service?
evaluation	0/Low - Data is not found, timeout problems, system is not completing the download 1/Medium - Data is found and delivered in near real time or less than 2 days 2/High - Real time data access (data view) and fast downloading service (a few hours)

Table 4: List of availability indicators and scoring system to assess the performance of the Virtual Infrastructures

Summary of the Indicators

The following table summarizes the defined indicators. Other indicators have been added to label the actions of the VIPs mentioned in the assessment template.

Availability indicators	
AI.VI.1	VI and VI data Visibility
AI.VI.2	Term of use and citation
AI.AC.1	Data Access
AI.AC.2	Data Format
AI.AC.3	Interoperability Services
AI.PE.1	Ability to access and download data in time frame
Additional indicators	
AI.VI.3	advertising the data/products
AI.PE.2	quality control data process (improvement/visibility)
AI.PE.3	addition of new data sets/products
AI.PE.4	Monitoring the VI activity by statistical tool

Table 5: Summary of the availability indicators to assess the Virtual Infrastructures

5. Results of the survey

5.1. Time allocated in WP6

WP6 represents 120 person months with different time allocations (Fig. 1) per VI. The highest number of person months (20 person months) was allocated to POSEIDON (HCMR) and the lowest (1.6 person months) to NorFerry (NIVA).

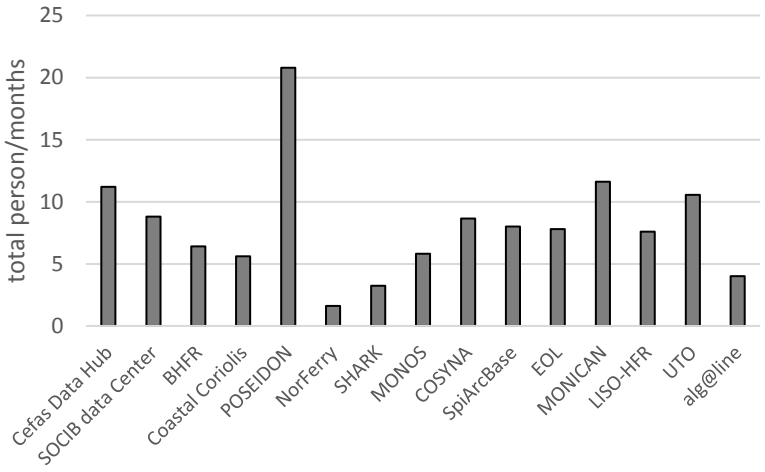


Figure 1: Time allocated per Virtual Infrastructure in person months

On average, 24% of the person months allocated to WP6 have been used by the VIP's (Fig. 2). The highest percentage was for SOCIB data centre (56.8%) and for ÜTO (43.3%). Ifremer, NIVA, IO-BAS and HZG did not declare any time in this WP6 for the first 18 months of the project.

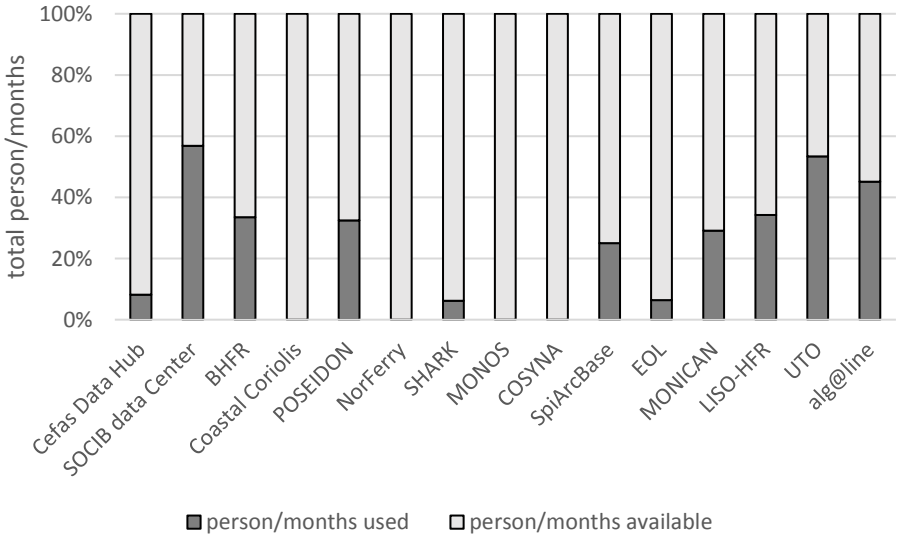


Figure 2: Activity per person months of each Virtual Infrastructure after 18 months

5.2. From the template

All the VIP's filled the template (see Annex 1). The oldest VI was POSEIDON (2008) and the newest ÜTO (2017). The data associated to ÜTO marine station were available before 2017 through the FMI web portal, a new website has been set up, giving directly access to the data for visualisation and downloading operation. 67% of the VIPs were linked to a European Data Infrastructures (EMODnet, NOOS, MONGOOS, CMEMS, Global HF radar portal, EPOC, SOMLIT). The statistical tool installed and used by the VIP's were Google Analytics, Piwik, EMODNet - Physics Dashboard, AWStats, BASH Shell and R, and server queries for downloads. The tools were applied from September 2015 to the end of April 2017. Information for POSEIDON, NOMOS, MONICAN, COSYNA, SOCIB data centre, SPI-ArcBase, Alg@line, SHARK, Cefas Data Hub, BHFR covered a period of 12 months' minimum of activity where Coastal Coriolis, EOL, UTO, LISO-HFR, 2 to 6 months. NorFerry was not included in the survey. Due to the limitation of some of the statistical tools, only the number and origin of visitors could be answered by all the VIP's (see Annex 1). Very little information was collected regarding the sector of activity of the users. When the information was available (only from 4 VIP's), 41% to 77% of the users belonged to Science and less than 12% to private sector. The users (more than 50%) were mainly located in the country of the VI. Only 3 VI's (Cefas Data Hub, Coastal Coriolis, COSYNA) presented DOI for the data.

5.3. From the availability indicators

5.3.1. VI's from Web Search

The purpose of this specific exercise was to answer to:

- "are the data from the Virtual infrastructure listed in the first result page of a google search?"
- "Is this link, linking to the proper VI page?"

As for the previous study, we only considered a Google search. The input line was the full name of the Virtual Infrastructure as described in the JERICO-NEXT DOW (e.g. for the NorFerry we asked Google to search "NIVA NorFerry").
The result was AV.VI.1 = 80%, while in the previous survey 84% were recorded. The lower score is due to some acronyms that are very close to common names (e.g. Shark), anyhow the results is very good and means that a not expert user can almost easily be redirected to the proper Virtual Infrastructure landing page.

5.3.2. VIs from Primary link.

		M18	M24
AI.VI.1	VI and VI data Visibility	72%	100%
AI.VI.2	Term of use and citation	41%	83%
AI.AC.1	Data Access	59%	80%
AI.AC.2	Data Format	100%	100%
AI.AC.3	Interoperability Services	28%	43%
AI.PE.1	Ability to access and download data in a specific time frame	41%	68%

Table 6: Results of the availability indicators applied on the primary link of the Virtual Infrastructures in JERICO-NEXT website

- AI.VI.1 reflected that providers updated both the VAI link and landing page.

- AI.VI.2 indicated if and how easy is to find the “terms of use” and/or “citation” for the given VI. The result suggested that most the VAI updated the information. 53% of VAI’s were cited JERICO-NEXT.
- AI.AC.1 indicated that VAI increased the accessibility of the data. Most of the VAI provide plots, or both plots and data (data download may require authentication). 20% did not provide any data or plot compared to the 40% during the previous survey.
- AI.AC2 was only considering the VAI’s that made data downloadable. All the VI are supplying data in a common format or standard.
- AI.AC.3 increased to 63%. Some of the VAI’s presented a section on how to ingest the VAI data. Most of the VAI provide data to EuroGOOS ROOS data portal[1], CMEMS and EMODnet Physics[2] . Therefore, they need an interoperability of services[3] .
- AI.PE.1 showed that it was easier for the user to download data from VAI’s. To note that, as indicated for AV.AC.3, the JERICO-NEXT data are available and downloadable from both CMEMS and EMODnet Physics (without restrictions for past 60 days and with authentication for older data).

5.3.3. *VIs in JERICO-NEXT data portal (under the EMODnet-Physics data portal).*

		M18	M24
AI.VI.1	VI and VI data Visibility	28%	81%
AI.VI.2	Term of use and citation	50%	81%
AI.AC.1	Data Access	53%	81%
AI.AC.2	Data Format	100%	100%
AI.AC.3	Interoperability Services	34%	100%
AI.PE.1	Ability to access and download data in a specific time frame	100%	100%

Table 7: Results of the availability indicators applied on Virtual Infrastructures in JERICO-NEXT data portal under EMODnet-Physics

- AI.VI.1 and AI.AC.1 showed that big progresses were achieved on the VAIs availability on JERICO-NEXT data portal. A few VAI’s is still missing but they were either under an ingestion / connection phase (e.g. EOL) or hosting data that cannot be plugged into the map viewer (e.g. SPI-S).

Note that the JERICO-NEXT data portal presents a specific filter / section for the VAI’s, and users can easily identify the VAIs and access to their data. As soon as the ingestion process is finished, the JERICO-NEXT data portal should reach the top score for VAI’s visibility.

- AI.VI.2. JERICO-NEXT was cited when accessing the dataset.
- AI.AC.2, AI.AC.3 and AI.PE.1 were evaluated on datasets available. The datasets were made in standard format and instructions were provided to connect (section “More about” of the platform) and downloaded them.

[1] To note that in some ROOS (e.g. ARCTIC) the data portal is under development. EuroGOOS ROOS data portals, CMEMS and EMODnet Physics are sharing the same backbone infrastructure and so the same data

[2] EMODnet Physics is alredy integrating HFR data that are not in the CMEMS yet. CMEMS is now running a Service Evolution project (INCREASE) to integrate and validate the HFR data flow infrastructure developed under a EuroGOOS and EMODnet Physics pilot for HFR

[3] ftp data transfer

5.3.4. VIs in EMODnet-Physics.

		M18	M24
AI.VI.1	VI and VI data Visibility	72%	88%
AI.VI.2	Term of use and citation	38%	88%
AI.AC.1	Data Access	75%	88%
AI.AC.2	Data Format	100%	100%
AI.AC.3	Interoperability Services	75%	100%
AI.PE.1	Ability to access and download data in a specific time frame	100%	100%

Table 8: Results of the availability indicators applied on Virtual Infrastructures in EMODnet-Physics

- AI.VI.1. EMODnet-Physics lists the providers or the VAI dataset (e.g. platform). VAI's were not easily found (e.g. user cannot find the NorFerry or Alg@line VAIs but the user can easily find the FerryBoxes belonging and operating for that VAIs). The SPI-S is out of EMODnet scope. AI.AV.1 was higher in EMODnet Physics than in JERICO-NEXT data portal because some VAI's did not have the JERICO-NEXT label (e.g. Coastal Coriolis). This is an on-going process to make the JERICO-NEXT data portal the one providing the highest visibility to data and VAI's. However, EMODnet-Physics will not implement a search by VAI's and will only offer a search by provider.
- AI. VI.2. If VAI is in JERICO-NEXT, EMODnet-Physics acknowledges the project.
- AI.AC.1. Some VAI's in WP6 were still missing in EMODnet-Physics (e.g. FMI: ÜTO).
- AI.AC.2, AI.AC.3 and AI.PE.1. Datasets available in EMODnet-Physics are in a standard format and downloading services take a few minutes (at most).

5.3.5. VIs in CMEMS

		M18	M24
AI.VI.1	VI and VI data Visibility	-	-
AI.VI.2	Term of use and citation	-	-
AI.AC.1	Data Access	56%	77%
AI.AC.2	Data Format	100%	100%
AI.AC.3	Interoperability Services	100%	100%
AI.PE.1	Ability to access and download data in a specific time frame	100%	100%

Table 9: Results of the availability indicators applied on Virtual Infrastructures in CMEMS

- AI.VI.1 JERICO-NEXT VAIs were not easily identifiable into the CMEMS products catalogue. It presents a general acknowledgement: "data provided by EUROGOOS regional systems and national data providers".
- AI.VI.2 CMEMS portal presents and describes the CMEMS "terms of use" and "citation"
- AI.AC.1 CMEMS does not integrate all the platforms yet (e.g. HF-Radar)
- AI.AC.2, AI.AC.3 and AI.PE.1 were evaluated on the available datasets only. Datasets are in a standard format and downloading services take a few minutes (after registration). CMEMS offers service desk to support not-expert users with their queries.

5.3.6. *VI's in EuroGOOS ROOS data portal*

There is not any significant change since the previous survey. As already discussed, a non-expert user cannot easily identify interoperability services on the ROOS's page, but all the ROOS's data portals are integrated into the infrastructure that delivers data to CMEMS, EMODnet-Physics and JERICO-NEXT data portal under EMODnet-Physics. If a dataset is not downloadable from the ROOS's data portal, it is available and can be download from CMEMS and/or EMODnet Physics and/or JERICO-NEXT data portal.

5.4. Characterisation of the actions of the Virtual Infrastructure Providers.

The past and future actions of the VIPs have been labelled. The results were summarised in Figures 3.

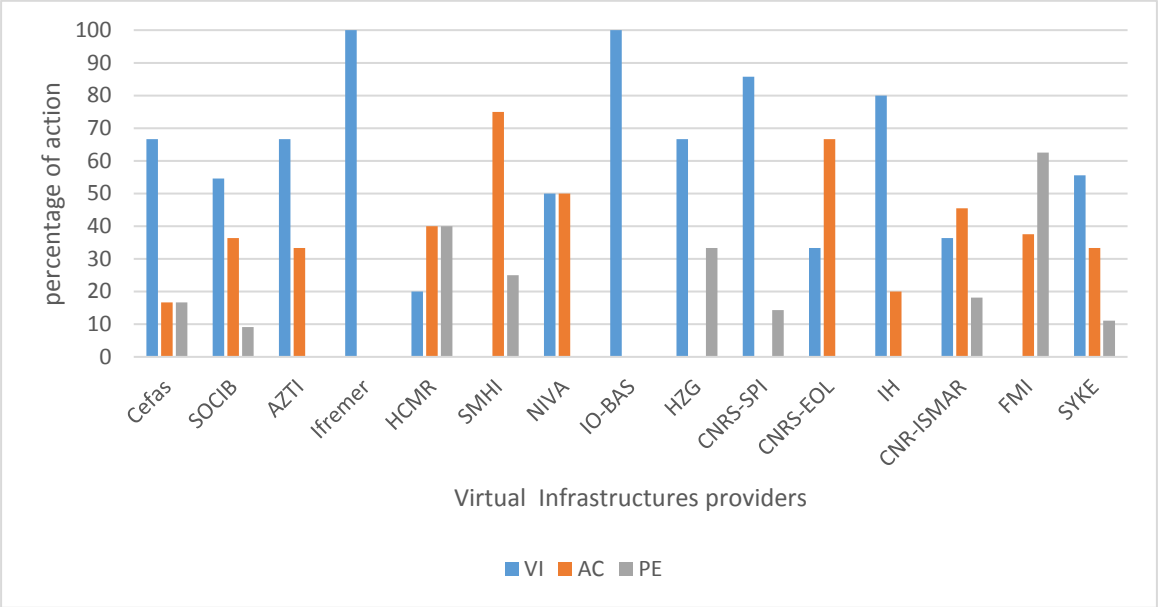


Figure 3: Distribution of the availability indicators across the Virtual Infrastructure Provider actions.

On average 54% of the actions in VA activity in JERICO-NEXT was associated to visibility, 30% to accessibility and 15% to performance. The actions were different according to the VIPs. 9 of the 15 providers presented more than 55% of their actions towards the visibility with a higher number of actions for SYKE and AZTI (Figure 3). However, they also had additional actions towards the accessibility and the performance in contrast to IO-BAS and Ifremer which concentrated their effort to improve the visibility of their VI. 3 of the VIs prioritised the accessibility (SMHI, CNRS-EOL and CNR-ISMAR) and only one provider focused on the performance (FMI).

6. Discussion and assessment

The role of the VI providers is to make their data available, i.e. the JERICO-NEXT WP6, more specifically WP6 has the main objective to provide free of charge "Virtual Access" to data and information from in situ systems such as HF radar, FerryBox and fixed platforms. Furthermore, it has promoted the improvement of existing services and potentially the development of new services. The JERICO-NEXT WP5 role is to make these data visible and accessible, by integrating all relevant coastal data and by facilitating their management through the JERICO Portal, EMODnet data systems (physical, chemical and biogeochemical) as well as other data management infrastructures, e.g. Copernicus Marine and EuroGOOS ROOSs data portal. WP5 and WP6 activities interact with JERICO-NEXT WP8 activities, which aim to increase the visibility of the JERICO-NEXT research infrastructure through the website and the data portal. The JERICO-NEXT Task 5.8 developed some availability indicators i.e. a methodology to assess the degree to which the datasets are discoverable, accessible, ready for use, and obtainable (either directly or indirectly) from the JERICO-NEXT VAI's. The availability indicators (AI's) provided then, an understanding of the readiness and service performance of the infrastructure providing access to data. By running a new survey with same methodology in different times during the project, it is possible to monitor the progresses of the VIP's towards these proprieties over time. The document presents the updated situation, 6 months later the issue of the delivery of D5.16. The main results can be summarised by:

- An increase of the visibility of the JERICO-NEXT Virtual Infrastructures. Listed VI links are now working and (in general) providing access to data. JERICO-NEXT project is cited and acknowledged.
- An increase of the number of VI platforms and datasets available and accessible by means of integrators (e.g. CMEMS and EMODnet-Physics). This is confirming that already established interoperability services between the VI's and ROOS's data portal, CMEMS and EMODnet-Physics are properly operational.
- A better visibility of the VI's and VI datasets in JERICO-NEXT website. Some data is still missing but ingestion and connection actions are undergoing.
- JERICO-NEXT VI's are not (easily) identifiable into the CMEMS products catalogue.

In this study, we used the Google search as test case to look at the visibility of the VI by accessing to the VI landing page (i.e. the page that describes the VI and rules to access its tools) or the link to the VI data and tool. Applying this approach, 100% of the VIs could be found easily. However, if the name of the VI is unique or the keywords used in a search are too specific to the VI, the probability of finding the VI is consequently high. In a future, the visibility should be assessed using a list of keywords related to data, products or services in a more general context to VI and potentially used different search engines for comparison. Nevertheless, our approach has demonstrated that all the links provided on the JERICO-NEXT website are now correct and the users can have access to data, products or services.

The assessment template does not provide a lot of information. The high availability of the data and products does not allow any traceability of the users. However, it highlights gaps and helps the VIP's to prioritise actions and get a better knowledge of their user needs for improving or creating services.

- Promote the traceability of the data by having DOI for data from each VIP
- Increase the link between the VIs and Pan-European Data Infrastructures
- Increase performance indicators from the primary link of the VI's (ex: increase the visibility of the quality control process)
- Better visibility and accessibility for the biological data

7. Conclusions

This deliverable D.8.13 gives an overview of the diversity of the VIs in JERCIO-NEXT. Initially set up for scientific purposes, some of the VI's now prioritise the diversity of their datasets and products for the needs of the society and private sector. They also increase the visibility and accessibility of the VI by using apps and videos. However, all the VIP's do not follow the same strategy which makes impossible to set up targets in the assessment of the VA activity in JERICO-NEXT. The expert panel will assess each VI by using the D8.13 as well as a summary of all the information related to the VIP activity during the first 18 months of the projects and collected in the assessment template. The role of the expert panel in the assessment of the VA activity is to determine if the requirements of the European commission have been fulfilled by answering to a questionnaire, to comment and label the actions past and future according to the availability indicators and to advice the VIP in their future action to improve or promote services through JERICO-NEXT infrastructure. The deliverable D6.1 (Month 30) will summarise all the comments from the expert panel and analyses done on the VIP's for the first 18 months of the project.

8. Annex 1

Assessment templates for the 15 Virtual Infrastructures for the period between September 2015 and April 2017.

Assessment of Virtual access provider (WP6)		
name of the organisation	**Cefas**	
1. Description of the portal		
Address	https://www.cefas.co.uk/cefas-data-hub/	
Creation date	01-10-2015	
Language	English	
Description	1. Datasets available include many of our legacy datasets covering subjects such as fish, shellfish and plankton survey data from the 1980's to the present day, crab tagging data, otolith sample data, records relating to MEDIN Marine Fisheries Data Archive Centre, water temperature, salinity, and sediment data from across the UK continental shelf **Repository** **Access with No registration** 2. WaveNet and SmartBuoy: Type of platform: **MOORINGS (SmartBuoys)** **Real-time** **Access with registration** (QC data)	
Access to the data	Direct from https://www.cefas.co.uk/cefas-data-hub/	
Link to another webportal	EMODnet-physics NOOS	
2. Statistics concerning the flow of information		
Statistical tool	Google analytics Server query for number of holding views and downloads	
Period	1-11-2015 to 03-05-2017	
Acquisitions	Direct (website directly): Organic search (key words in Google): Social (media): Twitter Referral (total): Referral: JERICO-NEXT	6,147 389 181 70.2% 1,774 24

Pageviews	page could be viewed several times during the same session	12,990
Unique pageviews	Page views one time per session	8,502
Avg. Time on Page	hh:mm:ss	00:04:01
Bounce Rate	Visitors who did not take any further action	75.3%
Downloads	Data	6.3%
Origin of visitor	Number of countries	100
10 Top countries	UK (5,814) USA (490) Russia (440) Netherlands (189) Germany (112) France (107) Jersey (74) Ireland (63) Italy (60) China (57)	68.5% 5.8% 5.2% 2.2 % 1.3% 1.3% 0.9% 0.7% 0.7% 0.6%
Comments	The statistics include the visits from Cefas The statistics consider all data in the Cefas data Hub	
What did you like to improve in the next 18 months	Make more attractive and useful the Cefas Data Hub page Incorporate the Logo of JERICO-NEXT on the webpage Create an apps for WaveNet data if it is affordable Discuss incorporation of more real-time data in EMODnet Physics	
3. Description of users		
WaveNet/SmartBuoy	Science (610) Policy (233) Industry (181) Society (448)	41.4% 15.8% 12.3% 30.4%
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data)	description	**DOI (publication)**

10.14466/CefasDataHub.4	Seawater temperature records for the UK Shelf - "all" Cefas Seawater Temperature Data 1880 - 2014	doi:10.14465/ 2013.arc01.001-012
10.14466/CefasDataHub.5	1 - Coastal Temperature Network	
10.14466/CefasDataHub.6	2 - Cefas Fishing Survey System	
10.14466/CefasDataHub.7	3 - Cefas Oceanographic Archive	
10.14466/CefasDataHub.8	4 - Cefas Plankton Analysis System	
10.14466/CefasDataHub.9	5 - Cefas Fisheries Ecology Research Programme	
10.14466/CefasDataHub.10	6 - Cefas SmartBuoy Monitoring Network	
10.14466/CefasDataHub.11	7 - Defra Strategic Wave Monitoring System	
10.14466/CefasDataHub.12	8 - Ferry Routes Monitoring System - Historical	
10.14466/CefasDataHub.17	13 - Cefas Multibeam Acoustics - Sound Velocity Profile Temperature Data	
10.14466/CefasDataHub.18	14 - Intensive plankton surveys off the north-east of England in 1976	doi:10.1007/s10113-014-0635-7
10.14466/CefasDataHub.19	15 - RV Cefas Endeavour - FerryBox Monitoring System	
10.14466/CefasDataHub.21	17 - Cefas ESM2 Profiler-mini CTD Logger	
10.14466/CefasDataHub.29	SmartBuoy observational network - North Dogger	doi:10.5194/bg-13-2511-2016
10.14466/CefasDataHub.31	Monthly average non-algal Suspended Particulate Matter concentrations	
10.14466/CefasDataHub.32	Sediment Organic Carbon in Marine Sediments around England and Wales 1996 - 2015	10.1007/s10533-017-0310-4
10.14466/CefasDataHub.33	North Sea phytoplankton pigments 2010 to 2011	doi:10.5194/bg-14-1419-2017
Comments	There is no link between doi-data and doi-publication	
What did you like to improve in the next 18 months	Create a link between doi-data and doi-publication if possible	
4.1.2. Publications		
van Leeuwen S, Tett P, Mills D, van der Molen J (2015) Stratified areas in the North Sea: long-term variability and biological and policy implications. JGR Oceans. doi: 10.1002/2014JC010485		
Alvera-Azcárate A, Vanhellemont Q, Ruddick K, Barth A, & Beckers J-M (2015). Analysis of high frequency geostationary ocean colour data using DINEOF. Estuarine, Coastal and Shelf Science, 159, 28–36. doi:10.1016/j.ecss. 2015.03.026		

Capuzzo E, Stephens D, Silva T, Barry J, Forster RM (2015) Decrease in water clarity of the southern and central North Sea during the 20th -century. Global Change Biology, 21, 2206–2214, doi: 10.1111/gcb.12854	
Tom Hull, Naomi Greenwood, Jan Kaiser, and Martin Johnson. Uncertainty and sensitivity in optode-based shelf-sea net. Biogeosciences, 13, 943-959, 2016. doi:10.5194/bg-13-943-2016	
Große F, Greenwood N, Kreus M, Lenhart HJ, Pätsch J, Salt LA, Thomas H (2016) Looking beyond stratification: A model-based analysis of the biological drivers of oxygen depletion in the North Sea. Biogeosciences, 13, 2511-2535. doi: 10.5194/bg-13-2511-2016	
Johan van der Molen, Piet Ruardij, and Naomi Greenwood. Potential environmental impact of tidal energy extraction in the Pentland Firth at large spatial scales: results of a biogeochemical model. Biogeosciences, 13, 2593-2609, 2016. doi:10.5194/bg-13-2593-2016	
Madihah Jafar-Sidik, Francis Gohin, David Bowers, John Howarth, Tom Hull.The relationship between Suspended Particulate Matter and Turbidity at a mooring station in a coastal environment: consequences for satellite-derived products. In press, Oceanologica. https://doi.org/10.1016/j.oceano.2017.04.003	
David A. Ford, Johan van der Molen, Kieran Hyder, John Bacon, Rosa Barciela, Veronique Creach, Robert McEwan, Piet Ruardij, Rodney Forster. 2017. Observing and modelling phytoplankton community structure in the North Sea. Biogeosciences. 14, 1419-1444. https://doi.org/10.5194/bg-14-1419-2017	
Johan van der Molen, Piet Ruardij,Naomi Greenwood. A 3D SPM model for biogeochemical modelling, with application to the northwest European continental shelf. In press, Journal of Sea Research. https://doi.org/10.1016/j.seares.2016.12.003	
comments	It is currently not a mandatory requirement to produce a data doi for each dataset. Consequently, it is difficult to trace all the publications using the data from Cefas DataHub. However, it is becoming more common for journals to require this, and the service is quite new, so usage is increasing.
What did you like to improve in the next 18 months	inform the visitors about the need to register their publications with Cefas Data Hub if they use Cefas data
4.1.3. Conferences or meeting	
Kevin Ruddick et al. Processing and exploitation of multisensory optical data for coastal water applications- The Highroc Project. proceedings of the ESA Living Planet Symposium held in Prague, 9-13 May 2016, ESA SP-740 Tom Hull, Naomi Greenwood, Jan Kaiser, Jo Hopkins, Charlotte Williams and Martin Johnson (2016) Balancing Buoys,Bubbles and Biology: Shelf-sea net community production estimates from long-term oxygen optode time-series.Challenger 2016 in Liverpool Juliane Wihsgott, Jonathan Sharples, Jo Hopkins, Malcolm Woodward, Naomi Greenwood, Tom Hull & Dave Sivyer (2016) The importance of the autumn bloom in the seasonal cycle of primary production. Challenger 2016 in Liverpool	
comments	There is no system in place to record conference or meeting attendance. The only information that we get is through the conference proceedings where they are published.
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
Saisiri Chaichana. Dissolved organic carbon and Nitrogen in coastal waters. University of East Anglia.pp366. January 2017	
4.2. Policy	
4.2.1. National and European framework	
WFD MSFD Shellfisheries water quality	

HABS Surveillance Programmes and Monitoring Classification and microbiological monitoring	
4.2.2. Meetings	
No information	
comments	no system to record the meeting
What did you like to improve in the next 18 months	create a link between Cefas Data Hub and CefMat to have access to assessment tools for WFD and MSFD (under restricted access)
4.3. small, medium and large companies and consultancy	
Number of contacts	2 known
Type of industry	Consultancies in remote sensing service,
What kind of services did they create or improve with the data	Validation of algorithms for remote sensing
comments	There is no system to identify the user Underestimation of the contacts
What did you like to improve in the next 18 months	Need further communication with Business development
4.4. Society	
Number of contacts	2
Type of societal activity	Environment Agency, Metoffice
What kind of services did they create or improve with the data	Weather forecast and high wave forecast
comments	There is no centralised system to identify the user
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	11.2
Total man months used in the last 18 months	0.91 (or 19 days)
% man month used	8.1%
Description of the activities	- Installation of Google analytics and other tools for measuring the number of downloads - Learning the possibilities of Google analytics - Taking part for setting up the doi-data
6. summary of future actions during the next 18 months	
Make more attractive and useful the Cefas Data Hub page – include a catalogue.	

Incorporate the Logo of JERICO-NEXT on the webpage
Create an app for WaveNet or SmartBuoy data if it is affordable
Create a link between doi-data and doi-publication if possible
Inform the visitors about the need to register their publications with Cefas datahub if they use Cefas data
Create a link between Cefas Data Hub and CefMat to have access to assessment tool for WFD and MSFD (under restricted access)

Assessment of Virtual access provider (WP6)	
name of the organisation	**AZTI**
2. Description of the portal	
Address	http://www.euskoos.eus/en/radar-higer-en/
Creation date	Portal (Beta version since March 2017); THREDDS and EMODnetPhysics (12 Feb 2016)
Language	English-Spanish-Basque-French
Description	This virtual access concerns data from the Basque HF Radar system, composed by two CODAR Seasonde antennas (transmit frequency 4.525 MHz). It offers many benefits such as: the improvement of the knowledge about surface currents and their forcing physical processes, applications in marine safety, search and rescue, pollution response, validation and calibration of both hydrodynamic and pollutant drift forecasting models, data assimilation on progress, etc. www.euskoos.eus/en is the new portal of the Basque coastal operational oceanography system operated by AZTI and Euskalmet. It is based on a Wordpress Webpage integrating EMODnet Physics capabilities. Through the JERICO-NEXT Virtual Access work-package, AZTI is working on the delivery of quality-controlled HF Radar data products. Existing European ocean data infrastructure (EMODnet Physics, CMEMS, SDN) and recommendations for standardization (EuroGOOS HFR Task Team) have been considered to put in place the data processing and flow, as well as the visualization and downloading capabilities.
Access to the data	Downloading of L3B Total currents (2D grid hourly updated) can performed through the EuskOOS portal (using capabilities of EMODnet Physics) or directly through the local THREDDS server: http://oceandata.azti.es/thredds/catalog/data/RADAR_OO/catalog.html
Link to another webportal	• EMODnet Physics: http://www.emodnet-physics.eu/Map/ • Global HF Radar potal: http://global-hfradar.org/ • Euskalmet webpage: http://www.euskalmet.euskadi.net/s07-5853x/es/meteorologia/selsensorR.apl?e=5&cod_esta=R097
2. Statistics concerning the flow of information	
Statistical tool	EMODnet Physics DashBoard
Period	Feb2016-May2017
Acquisitions	

Pageviews	366	
Unique pageviews		
Avg. Time on Page		
Bounce Rate		
Downloads	11	
Origin of visitor	4 countries	
10 Top countries	France United Kingdom Belgium Denmark	
Comments	The Basque HF Radar system has been one of the three first systems connected to EMODnet Physics from feb2016. The effort has been put in adapting the system for fulfilling the standards defined in parallel in JERICO-NEXT WP5 and coordinated by EuroGOOS HF Radar Task Team. Nevertheless, no advertising has been performed to local users. This is the objective of the local portal EuskOOS (beta version available in euskoos.eus that will be launched officially during summer 2017.	
What did you like to improve in the next 18 months	Through the official Kick-off of EuskOOS, the local portal of the Basque Coastal Observing System, an increase of the number of users in visualization portals is expected. The improvement on data quality will impact also on the scientific use of these data.	

3. Description of users

The first key user is the Basque HF Radar System is the Directorate of Emergency Response and Meteorology of the Safety Department of the Basque Government (Regional Authorities). Their responsibilities (ley 1/1996, 3 April, Emergency Management) include:

(a) encouraging the creation and development of means and resources oriented to respond to possible emergencies in the autonomous community of Euskadi.

(b) developing measures to ensure response to incidents in territorial waters corresponding to the coastal area, and the implementation of legislation in the field of maritime rescue.

c) planning, monitoring and maintenance of the met-ocean network and the quality of information from the network.

d) developing policies and products of meteorological and climate information suitable for public services (civil protection, safety, etc.) as well as for the various sectors and economic activities in which the climatology and meteorology have special relevance (agriculture, fishing, etc.).

The Basque Government is a member of IBIROOS and is sharing the data from their metocean network with the European community of Operational Oceanography through the Data Exchange Agreement of that ROOS.

Thanks to this open data policy, other users come from the international (mainly European) scientific community, European and National stakeholders, and the society in the Basque Country.

Examples of identified and specific users are:

- The Basque police used the data for legal actions (search of cadaver in the littoral, Feb2017)
- The Spanish Marine safety agency (SASEMAR) has access to the data.
- The European Maritime Safety Agency (through EMODnet Physics access)
- Scientific community working on ocean processes in the Bay of Biscay (UPV, Suez Environment, LEGOS, Mercator, IFREMER, IMEDEA, CNR…)

The fields of applications include: Maritime safety, Marine Floating Litter Management, Short term prediction of transport, ocean model assessment, Research on air-Ocean exchanges, coastal processes.		
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
No information		No information
comments		
What did you like to improve in the next 18 months	To work on applying DOI to the data is planned for the next period.	
4.1.2. Publications		
HF Radar Activity in European Coastal Seas: Next Steps Towards a Pan-European HF Radar Network. Rubio A, Mader J, Corgnati L, Mantovani C, Griffa A, Novellino A, Quentin C, Wyatt L, Schulz-Stellenfleth J, Horstmann J, Lorente P, Zambianchi E, Hartnett M, Fernandes C, Zervakis V, Gorringe P, Melet A and Puillat I (2017). Front. Mar. Sci. 4:8. doi: 10.3389/fmars.2017.00008 (2017).		
Skill assessment of HF radar-derived products for lagrangian simulations in the Bay of Biscay. Solabarrieta L., Frolov S., Cook M., Paduan J., Rubio A., González M., Mader J., Charria G., Journal of Atmospheric and Oceanic Technology. Journal of Atmospheric and Oceanic Technology 33(12) August 2016 (2016).		
Rubio A., Caballero A., Orfila, A., Hernández-Carrasco, I., Ferrer L., González M., Solabarrieta, L, Mader, J. Eddy-induced cross-shelf export of high Chl-a coastal waters in the SE Bay of Biscay (2017, under review in Remote Sensing of Environment)		
comments	Other publications are in progress	
What did you like to improve in the next 18 months		
4.1.3. Conferences or meeting		
Towards 4D shelf/slope circulation and transport estimations in the SE Bay of Biscay, within the framework of JERICO-NEXT Joint Research Activity Projects (JRAPs). Rubio, A., Caballero, A., Charria, G., Lazure, P., De Mey, P., Marié, L., Ferrer, L., Mader, J., Puillat, I. XV International Symposium on Oceanography of the Bay of Biscay (ISOBAY 15), 22−24 June 2016, Bilbao, Spain. Abstract book, 93 (poster).		
HF Radar Insight Into Coastal Mesoscale Eddies And Associated Cross-Shelf Transports In The South Eastern Bay Of Biscay (NE Atlantic) (OS11C-02, Invited). Rubio A., Caballero, A., Orfila, A., González M., Ferrer, L., Solabarrieta, L., Mader, J. AGU FAll Metting, SF, USA, December 2016		
HF radar insight into rapidly evolving mesoscale structures in the SE Bay of Biscay. A. Rubio, A. Caballero, L. Solabarrieta, L. Ferrer and J. Mader. EOF2016. Alicante, Spain, July 2016. Oral presentation		
Joint Efforts Towards European HF Radar Integration. Mader, J., Rubio, A., Griffa, A., Mantovani, C., Corgnati, L., Novellino, A., Schulz-Stellenfleth, J., Quentin, C., Wyatt, L., Ruiz, M.I., Lorente, P., Hartnett, M., Gorringe, P."OS13B Toward an International Coastal Ocean Radar Network: Technology Development, Research Demonstration, and Operational Applications II Posters" session of the AGU- Fall Meeting, San Francisco, USA, 12 December 2016.		
Ganix Esnaola, Alexander Barth, Aida Alvera Azcárate, Jon Saenz, Gabriel Ibarra-Berastegi, Santos J. González-Rojí , Combined DINEOF reconstruction of SEVIRI SST and HF-Radar surface current data aided with WRFDA winds. A case study in		

the Bay of Biscay during winters with a surface signal of the Iberian Poleward Current. (Oral) 2016 Liège Colloquium on Ocean Dynamics : Submesoscale Processes: Mechanisms, Implications and new Frontiers.	
Gestión sostenible de la basura marina flotante en Gipuzkoa y Labourd – Sustainable management of the Floatting Marine Litter in Gipuzkoa and Labourd. Oihane C. Basurko, A. Rubio, I. Granado, L. Ferrer, V. Salvo, I. Ruiz, B. Marticorena, P. Bergeron, C. Sarrade, P. Otheguy. (Oral), XIV Jornadas Españolas de Ingeniería de Costas y Puertos – Alicante, Spain (In Spanish), May 2017	
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
1 PhD Thesis in progress on the use of HF radar to infer subsurface transports. Student Ivan Manso Navarte. Expected date of end: Mars 2021. Co-directors: A. Caballero & A. Rubio (AZTI)	
4.2. Policy	
4.2.1. National and European framework	
Directorate of Emergency Response and Meteorology of the Safety Department of the Basque Government (Regional Authorities) coordinates the reflexion for improving the use of the HF Radar data in actions related to safety in the littoral.	
4.2.2. Meetings	
20 september 2016 & 14 February 2017	
comments	
What did you like to improve in the next 18 months	The implementation of gap filling products with quality control will improve the use of this data close to the Basque coast.
4.3. small, medium and large companies and consultancy	
Number of contacts	1 (SUEZ Environment)
Type of industry	Water management
What kind of services did they create or improve with the data	They are validating modelling products for water waste management and floating marine litter management.
comments	
What did you like to improve in the next 18 months	The results of these applications will be present in a cross-boundary institution between France and Spain. This will advertise the use of the data to other companies
4.4. Society	
Number of contacts	Users of EuskOOS
Type of societal activity	
What kind of services did they create or improve with the data	
comments	Up to now, the EuskOOS portal is a beta version. It will be advertised soon and will improve a lot the number of users in the society.
What did you like to improve in the next 18 months	

5. what has been done the last 18 months	
Total man months	6.4
Total man months used in the last 18 months	2.16
% man month used	34%
Description of the activities	A THREDDS server has been put in place for interoperable delivery. Operational conversion between CODAR data format to standardized netcdf file has been implemented. L4 data product, Hourly OMA, has been implemented in local AZTI THREDDS server In the local portal EuskOOS, a specific area has been dedicated to the HF Radar data giving visibility to the JERICO-NEXT Virtual access
6. summary of future actions during the next 18 months	
Real-time quality control (based on updated European standards) data products will be implemented (L2B Radial currents and L3B Total Currents) in the THREDDS server. The local portal EuskOOS will be launch officially with an expected impact on the number of users.	

Assessment of Virtual access provider (WP6)		
name of the organisation	**IFREMER**	
3. Description of the portal		
Address	http://www.coriolis-cotier.org	
Creation date	01-12-2016	
Language	English	
Description	Coastal Coriolis is providing real time (or near real time) qualified observations in the Engligh Channel, the Bay of Biscay and the Northwestern Mediterranean Sea. Observations are collected through platforms including moorings, coastal profilers, HF Radar and Fishery Observing System. An interactive data visualization is implemented including added information on provider and platform. All data can be freely downloaded.	
Access to the data	http://data.coriolis-cotier.org	
Link to another webportal	EMODnet-physics	
2. Statistics concerning the flow of information		
Statistical tool	AWSTATS	
Period	Nov 2016 – May 2017	
Acquisitions		
Pageviews		704328
Unique pageviews	Visitors	39888

Avg. Time on Page	Avg time on all web-site	160s
Bounce Rate		
Downloads	Bandwith used	29.53 Go
Origin of visitor		
10 Top countries	France United States Japan Great Britain Belgium Italy Spain Germany Netherlands India Others	635764 pages 9098 7422 5728 2810 2075 1681 1574 1387 1444 27135
Comments		
What did you like to improve in the next 18 months	Reduce the time to display time series on web pages. Extend the available dataset on the web page. Update static content. Attribute doi to more available datasets	
3. Description of users		
No information		
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
10.17882/39754	MAREL Carnot data and metadata from Coriolis Data Centre	
10.17882/46529	MOLIT Vilaine data and metadata from Coriolis Data Centre	

Comments	The creation of doi for coastal dataset is just starting.
What did you like to improve in the next 18 months	Extend doi to the different stations of the network.

4.1.2. Publications

Rubio Anna, Mader Julien, Corgnati Lorenzo, Mantovani Carlo, Griffa Annalisa, Novellino Antonio, Quentin Céline, Wyatt Lucy, Schulz-Stellenfleth Johannes, Horstmann Jochen, Lorente Pablo, Zambianchi Enrico, Hartnett Michael, Fernandes Carlos, Zervakis Vassilis, Gorringe Patrick, Melet Angélique, Puillat Ingrid, HF Radar Activity in European Coastal Seas: Next Steps toward a Pan-European HF Radar Network, Frontiers in Marine Science, 4, doi:10.3389/fmars.2017.00008, 2017.

Kbaier Ben Ismail K., Pascal Lazure, Ingrid Puillat, Statistical properties and time-frequency analysis of temperature, salinity and turbidity measured by the MAREL Carnot station in the coastal waters of Boulogne-sur-Mer (France), Journal of Marine Systems, Volume 162, October 2016, Pages 137-153, ISSN 0924-7963, http://dx.doi.org/10.1016/j.jmarsys.2016.03.010.

Lamouroux, J., G. Charria, P. De Mey, S. Raynaud, C. Heyraud, P. Craneguy, F. Dumas, and M. Le Henaff, Objective assessment of the contribution of the RECOPESCA network to the monitoring of 3D coastal ocean variables in the Bay of Biscay and the English Channel,Ocean Dynamics, 66(4), pp. 567-588, doi:10.1007/s10236-016-0938-y, 2016.

Ody A., Doxaran David, Vanhellemont Quinten, Nechad Bouchra, Novoa Stefani, Many Gael, Bourrin Francois, Verney Romaric, Pairaud Ivane, Gentili Bernard (2016). Potential of High Spatial and Temporal Ocean Color Satellite Data to Study the Dynamics of Suspended Particles in a Micro-Tidal River Plume. *Remote Sensing*, 8(3), 1-35. Publisher's official version : http://doi.org/10.3390/rs8030245

Many G., Bourrin Francois, Durrieu De Madron Xavier, Pairaud Ivane, Gangloff Aurelien, Doxaran David, Ody Anouck, Verney Romaric, Menniti Christophe, Le Berre David, Jacquet Matthias (2016). Particle assemblage characterization in the Rhone river ROFI. *Journal Of Marine Systems*, 157, 39-51. http://doi.org/10.1016/j.jmarsys.2015.12.010

Comments	The website is not cited as a source for those publications. We need to create doi for all dataset and the to track related publications.
What did you like to improve in the next 18 months	

4.1.3. Conferences or meeting

No information

What did you like to improve in the next 18 months	

4.1.4. PhD Thesis

No information

4.2. Policy

4.2.1. National and European framework

No information

4.2.2. Meetings

No information

Comments	
What did you like to improve in the next 18 months	

4.3. small, medium and large companies and consultancy	
Number of contacts	No information
Type of industry	No information
What kind of services did they create or improve with the data	No information
comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	No information
Type of societal activity	No information
What kind of services did they create or improve with the data	No information
comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	0
Total man months used in the last 18 months	0
% man month used	0%
Description of the activities	subcontract for designing the available website.
6. summary of future actions during the next 18 months	
Improve website Extend doi creation to other datasets	

Assessment of Virtual access provider (WP6)	
name of the organisation	**EOL**
1. Description of the portal	
Address	http://www.obs-vlfr.fr/data/view/eol/ctd/ http://www.obs-vlfr.fr/data/view/eol/surface/
Creation date	07/2016

Language	English	
Description	Several other datasets for coastal observations are made available on this web link (http://www.obs-vlfr.fr/data/view/), covering a wide range of subjects : zoo- and ichthyoplankton, meteo at the buoy and at costal sites, phytoplankton (HPLC).	
Access to the data	on request through webmail	
Link to another webportal	http://somlit.epoc.u-bordeaux1.fr/fr/	
2. Statistics concerning the flow of information		
Statistical tool	Google Analytics	
Period	from January 2017	
Acquisitions		
Pageviews	20 per month on average	
Unique pageviews	18 per month on average	
Avg. Time on Page	10 mn on average	
Bounce Rate	not relevant (single page site)	
Downloads	not tracked	
Origin of visitor	*Country*	*Pageviews*
10 Top countries	France United States Brazil United Kingdom Russia (not set) Italy Colombia Finland Hong Kong	37 11 7 4 3 3 2 1 1 1
Comments	The visits from the OOV are not included in these countings.	
What did you like to improve in the next 18 months	To spread the website link to make the datasets widely available.	
3. Description of users		
We do not have any idea of the user's profile		
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		

DOI (data) https://doi.org/1	description	**DOI (publication)**
comments	The datasets have no DOI at that time. These point is under discussion to be sure to track the dataset as well as the publications, and how to DOI the datasets. To feed the national database center.	
What did you like to improve in the next 18 months		
4.1.2. Publications		
No information		
comments	NA	
What did you like to improve in the next 18 months		
4.1.3. Conferences or meeting		
No information		
What did you like to improve in the next 18 months	NA	
4.1.4. PhD Thesis		
NA		
4.2. Policy		
4.2.1. National and European framework		
NA		
4.2.2. Meetings		
NA		
Comments		
What did you like to improve in the next 18 months		
4.3. small, medium and large companies and consultancy		
Number of contacts	1	
Type of industry	Public	
What kind of services did they create or improve with the data	- Survey of the coastal environment for Nice municipality - Improvement of their own strategy	
Comments		
What did you like to improve in the next 18 months	- Direct contacts with the users to better identify the fields of research/industry.	

4.4. Society	
Number of contacts	NA
Type of societal activity	NA
What kind of services did they create or improve with the data	NA
Comments	NA
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	7.2
Total man months used in the last 18 months	0.95
% man month used	
Description of the activities	- development and setting of the website - made data accessible
6. summary of future actions during the next 18 months	
Link with EMODnet-Physics	

Assessment of Virtual access provider (WP6)	
name of the organisation	**IH - INSTITUTO HIDROGRAFICO**
4. Description of the portal	
Address	http://monican.hidrografico.pt/
Creation date	2009
Language	Portuguese and English
Description	1. Access to real-time data transmitted hourly by monitoring systems installed in Nazare Canyon area of influence. Platforms: • Real-time multiparameter buoys (water depths 90m and 1800m). Parameters: Wave parameters, Meteorological measurements, sea surface temperature, near surface fluorometry/nephelometry near surface dissolved oxygen. • Real-time coastal tidal gauges (port of Nazare). Parameters: Sea surface height. **Real time and Repository** **Access with no registration**

	2. Access to data recorded hourly by two multiparametric buoys installed in Nazare Canyon area of influence (water depths 90m and 1800m) in table graphical form for period selected by used. Parameters (in addition to those indicated above): Wave spectral parameters, water currents in the upper 100m depth, water temperature at selected depths in first 200m (on one buoy). **Repository** **Access with registration through request** 3. Access to forecasts products of the conditions affecting the Nazare Canyon area of influence. Graphical form. Products: • Forecast of wave conditions • Observations and Forecasts of meteorological and wave • Observations and Forecast of sea surface elevations associated with tides in the port of Nazare port. **Access with no registration**
Access to the data	• Direct from http://monican.hidrografico.pt/ for points 1 and 3 above • Automatic transfer of real-time data to IBIROSS POC (Puertos del Estado) and to GTS POC (IPMA). Data feeds EMODNET through IBIROOS. • From request to IH Data Dissemination Service for point 2 above (registration form provided in IH general web page)
Link to another webportal	MONICAN web page can be accessed also from IH web portal (www.hidrografico.pt) and provide link to this portal
2.Statistics concerning the flow of information	
Statistical tool	Google analytics
Period	01-09-2015 to 31-03-2017
Acquisitions	• **Referral** • **Organic search** • **Social** • **Other**
	• 62.30% of sessions(more than 90% of which from Google) • 9.01% of sessions • 0.34% of sessions • 0.14%
Page views	Total number of visualized pages	112 524
Unique page views	page views one time per session	1.47
Avg. Time on Page	hh:mm:ss	00:01:01
Bounce Rate	visitors who did not take any action	80.10%
Downloads	Not possible to account for	
Origin of visitor	Number of countries	183 (69 of these have less than 10 sessions)

10 Top countries	Country (number of sessions) • Portugal (37 063) • Germany (2 026) • UK (620) • USA (530) • Spain (522) • Brazil (296) • Switzerland (282) • France (249) • Russia (209) • Austria (155)	Percentage of sessions • 86.4% • 4.7% • 1.4% • 1.2% • 1.2% • 0.7% • 0.7% • 0.6% • 0.5% • 0.4%
Comments	Data includes a limited number of visits from IH 1 session corresponds to the period of time during which the user interacts with the website; in each session the user can visualize several pages of the website **Menu visualisations** • **Home:** 21 366 • **System:** 5 161 • **Nazare Canyon:** 5 161 • **Products: 54 442** - Products real-time data: 53 013 - Model comparisons: 164 • **Forecasts:** 177 699	
What did you like to improve in the next 18 months	May 2017: JERICO-NEXT logo was implemented in the web page just after the end of the reported period. Introductory text (Home page) was also rewrite in order to explain MONICAN system as part of JERICO-NEXT network. In the next 18 months we expect to implement the tolls for the access of archived data directly from the web page without need for request. Update/redesign of the web page	
3. Description of users		
Science	Operational oceanography centres (feed automatically by ftp to POC centres)	• IBIROOS • GTS network (MONICAN data appearing in links to web pages such as http://www.jcommops.org/ or SURFMAR) • IPMA (Portuguese Institute of Sea and Atmosphere)
Policy	Governmental agencies responsible for MSFD implementation. Governmental agents responsible for search and rescue operations or for the operational response in case of oil spill accidents Companies developing forecasts products for support of navigation and coastal operations	General Direction for Marine Resources (DGRM) Navy General Direction of the Maritime Authority (DGAM)

Industry **Society**	Nazare municipality	links to MONICAN web page from web pages in the dependency of Nazare Town Hall
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	Description	**DOI (publication)**
Date of data request	**User/Institution**	**Data provided**
September 2015 –	Lisbon University (Portugal)	All data from coastal MONICAN buoy (Monican02) from year 2015
October 2015	Institute of Geography and Territory Management –(IGOT), Lisbon University (Portugal)	Wave data from coastal MONICAN buoy (Monican2) from 2010 to 2014
November 2015	Institute of Geography and Territory Management (IGOT), Lisbon University (Portugal	Wave data from coastal MONICAN buoy (Monican2) for the year 2011
January 2016.	João Silva, National Laboratory of Energy and Geology -LNEG (Portugal)	Sea Surface Temperature, Wave and Meteorological data from the two MONICAN buoys (MONICAN1 and MONICAN2) for the periods Jun2014-Jun2015, Jan2009–Dec2010 and Jun2011-Jun2012
January 2016	University of Lisbon (Portugal)	Wave and meteorological dará from offshore MONICAN buoy (MONICAN1 buoy) for a few months between 2010 and 2013
2016	Ana Lopes – School of Economics and Management (Faculdade de Economia), Universidade Nova de Lisboa (Portugal)	Meteorological data from offshore MONICAN buoy (MONICAN1 buoy) from Jun2015 to Mai2016
Oct 2016	Ricardo Jorge Garcia, Institute of Geography and Territory Management (IGOT), Lisbon University(Portugal) –	Wave and meteorological data from offshore MONICAN buoy (MONICAN1 buoy) from Oct2015 to May2016

comments	
What did you like to improve in the next 18 months	Direct contact with users and institutions to track the development of the research using data provided and identification of scientific publications derived

4.1.2. Publications

Ricardo Vicente, Rita Esteves, Luísa Lamas), José Paulo Pinto, Sara Almeida), Eduardo de Azevedo, Cecília Correia), Francisco Reis. TOWARDS CALIBRATION OF SENTINEL 3 DATA: VALIDATION OF SATELLITE-DERIVED SST AGAINST IN SITU COASTAL OBSERVATIONS OFF THE PORTUGUESE MARINE WATERS, Living Planet Symposium - ESA, Prague Conference in the Czech Republic on 9—13 May.

comments	Gathering of publications produced from research using data collected by MONICAN system and provided since September2015. Contact with researchers for alerting for the need of acknowledgement of data provenience in publications.
What did you like to improve in the next 18 months	

4.1.3. Conferences or meeting

Event 1: HORIZON 2020 - MARINE AND ATLANTIC ACTION PLAN: "OCEAN COOPERATION BETWEEN EUROPE AND CANADA RELATED TO OCEAN OBSERVATORY SCIENCE, TECHNOLOGY AND INNOVATION"

Date: November 4-6, 2015
Location: Institute of Marine Sciences (ICM) Barcelona

Organization: Institute of Marine Sciences (ICM) of the Spanish National Research Council (CSIC), Ocean Networks Canada (ONC), Embassy of Canada to Spain and the Spanish Institute of Oceanography (IEO), with the collaboration of the European Commission and the Canada Foundation for Innovation

Participant from IH: João Vitorino

Action related with JERICO-NEX: Oral presentation of IH monitoring/forecasting capacities at the Working Group # 1 (Real time and long-term observations in submarine canyons' research), where emphasis was given in the MONICAN system, installed on the area of Nazare Canyon and the contribution of this system to JERICO-NEXT (Number of participants in this specific e session: ~20)

Event 2: Marine Technologies Workshop 2015

Date: 12-13 November 2015
Location: Instituto Hidrografico, Lisbon
Organization: Instituto Hidrografico,

Participant from IH: João Vitorino

Action related with JERICO-NEX: Oral presentation "IH in-situ monitoring networks: a pillar of MONIZEE strategy" where insertion of IH system with JERICO-NEXT network was presented. (number of participants in the session ~50)

Participation planned for next 6-8 months

Event 3: Ocean Business 17
Date: 4-6 April 2017
Location: NOC - Southampton
Organization: NOC/Society of Maritime Industries

Participant from IH: Frederico Diniz

Action related with JERICO-NEX: Presentation of poster untitled “Eyes on Europe’s big canyon” focussing the MONICAN system for Nazare Canyon area and its contribution to JERICO-NEXT network.

Event 4: La Journée du Gouf du 10 septembre 2017 : Capbreton / Nazaré. *Canyons sous-marins et vagues géantes*
Date: 10 September 2017
Location: CapeBreton
Organization: Ville de Capbreton

Participant from IH: Joao Vitorino

Action related with JERICO-NEX: Oral presentation in session dedicated to Nazare Canyon and physical processes, in which we plan to focus the monitoring capacities installed by IH in this area (MONICAN system), the contribution of this system to the european network of coastal observatories assembled under JERICO-NEXT and the work that is being developed under JERICO-NEXT aiming to extend both the understanding of the processes in this area as well as the present capacity to forecast them.

What did you like to improve in the next 18 months	Direct contact with students and institutions in order to track how useful was the data and to identify the thesis and associated publications derived

4.1.4. PhD Thesis

During the reported period MONICAN data was provided to the following requests aiming the use of this data in PhD THESIS work

January 2016 – Ana Carvalho, PhD Thesis University of Porto (Portugal), Temperature data from offshore MONICAN buoy (MONICAN1 buoy) from Apr2014 to Jul2016

September 2015 – PhD Thesis at Faculty of Science of Lisbon University (Portugal)- Wave data from offshore MONICAN buoy (MONICAN1 buoy) from 2009 to 2015

2016 - Monica Ribeiro, PhD Thesis at Faculty of Sciences of Lisbon University (Portugal) – Wave data from offshore MONICAN buoy (MONICAN1 buoy)

December 2016 – Claudia Moreira, PhD Thesis at Interdisciplinary Centre of Marine and Environmental Research, University of Porto (Portugal), Sea surface temperature from MONINCAN buoys from Jan2011 to Dec2015.

December 2016 - Joao Franco, PhD Thesis , Wave data from coastal MONICAN buoy (MONICAN2 buoy) from 2011 to 2016

In addition, also during the reported period MONICAN data was provided to the following requests aimingthe use of the data in MASTER THESIS work

October 2015 – Master Thesis in Maritime Electronic Systems – All data from coastal MONICAN buoy (MONICAN2 buoy) from 2010 to 2014.

November 2016 – Ricardo Garcia, Master Thesis in Aquaculture, Superior School of Tourism and Sea Technologies, Peniche, Leiria Polytechnic School (Portugal)– Sea surface temperature and meteorological data from coastal MONICAN buoy (MONICAN2 buoy) from Jul2015 to Mar2016

4.2. Policy

4.2.1. National and European framework

MSFD – The MONICAN system is part of the national real-time monitoring system for the Portuguese EEZ operated by IH which contributes to the national implementation of the MSFD

During the reported period MONICAN data was provided to the following municipalities in reply to requests: • October 2016 – Town Hall Alcobaça (Portugal)– Wave data from coastal MONICAN buoy (MONICAN2 buoy) from Oct2014 to Jan2016 • November 2016 Town Hall Nazaré (Portugal)- Wave and meteorology data from MONICAN buoys from 2010 to 2016	
4.2.2. Meetings	
No information	
Comments	
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	1
Type of industry	Development/application of technical software, innovative e-navigation solutions, services and technology for the maritime sector
What kind of services did they create or improve with the data	Development of a sea storm warning service covering Portugal's mainland and autonomous regions designed to provide advice (and warning) to the navigation, the aquaculture industry, the fishings or the coastal recreational activities as well as search and rescue missions or sea pollution events.
Comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	2
Type of societal activity	Direct contact with Nazare Town Hall services to provide support to organization of Nazare big wave championships. These events mobilize a large public and have an important economic impact on the region
What kind of services did they create or improve with the data	The web page of the event organization (http://praiadonorte.com.pt/) has a direct link to MONICAN web page allowing for participants and public to find real-time measurements and forecasts of the conditions offshore Nazare.
Type of societal activity	Collaboration with the Nazare Town Hall for the public dissemination of present knowledge about the Nazare Canyon, related physical, geological and chemical processes and the MONICAN monitoring/forecasting capacities.
What kind of services did they create or improve with the data	IH exhibition installed in one room of the Fort of S. Miguel (Nazare) the location of choice for the following of big wave competitions and/or observation of the extreme waves of Nazare Canyon and attracting a large public.
Comments	
What did you like to improve in the next 18 months	Redesign of some of the material presented in the Fort of S. Miguel in order to include JERICO-NEXT logo and to disseminate the project

5. what has been done the last 18 months	
Total man months	11.16
Total man months used in the last 18 months	3
% man month used	26.86%
Description of the activities	• Maintenance action on 2 multiparametric buoys and 2 tide gauge stations (MONICAN system) • Maintenance MONICAN web portal updated with real-time data and products • Development and implementation of dissemination products to MONICAN web page
6. summary of future actions during the next 18 months	
Implement further solution for access to data from the MONICAN web page Redesign/update information contained in the web page Track the use of MONINCA data in publications and web pages.	

Assessment of Virtual access provider (WP6)	
name of the organisation	**IO-BAS**
5. Description of the portal	
Address	http://www.bgodc.io-bas.bg/
Creation date	04-Nov-2009 10:15
Language	English
Description	1. Datasets available from Bulgarian Black Sea monitoring programme **Access with registration** 2. National oceanographic marine observing system: a) POMOS (coastal stations) **Real –time** **Access with registration** b) Sea-level stations **Real –time** **Access with registration** c) Mooring boys in Varna and Burgas Bay **Real –time** **Access with registration** d) Ferrybox systems **Real –time** **Access with registration**
Access to the data	http://www.bgodc.io-bas.bg/database-reports.html
Link to another webportal	EMODnet-physics, EMODnet –chemistry, CMEMS INS TAC

2. Statistics concerning the flow of information		
Statistical tool	Webcounter	
Period	1-11-2015 to 03-05-2017	
Acquisitions	Direct (website directly)	
Pageviews	Unique pageviews plus reloads	48862
Unique pageviews	Page view some time per session	1883
Avg. Time on Page		
Bounce Rate		
Downloads		
Origin of visitor	Number of countries	8
10 Top countries	Bulgaria (7,136) Samoa -(127) United Kingdom (19) Germany (2) Italy (2) Turkey (2) Belgium (1) Russian Federation (1)	97.6% 1.7% 0.3% 0.02% 0.02% 0,02% 0,01% 0.01%
Comments	This data include the visits from IO-BAS	
What did you like to improve in the next 18 months	Incorporate the Logo of JERICO-NEXT on the webpage Make more attractive and useful the BODC webpage	
3. Description of users		
NOMOS	Industry Non-profit organization Science	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	Description	**DOI (publication)**

No information		No information
comments	There is no system to record the data use	
What did you like to improve in the next 18 months	To set up a system to trace data use	
4.1.2. Publications		
No information		
comments	There is no system to trace the publications using the data from Bulgarian Oceanographic Data Centre (BGODC)	
What did you like to improve in the next 18 months	To set up a system to trace the publications using data from Bulgarian Oceanographic Data Centre (BGODC)	
4.1.3. Conferences or meeting		
No information		
Comments	There is no system to record conference or meeting attendance	
What did you like to improve in the next 18 months	To set up a system to record the conference or meeting attendance	
4.1.4. PhD Thesis		
No information		
4.2. Policy		
4.2.1. National and European framework		
Water Framework Directive Marine Strategy Framework Directive		
4.2.2. Meetings		
No information		
Comments		
What did you like to improve in the next 18 months		
4.3. small, medium and large companies and consultancy		
Number of contacts		
Type of industry		
What kind of services did they create or improve with the data		
Comments		
What did you like to improve in the next 18 months		
4.4. Society		
Number of contacts		

Type of societal activity	
What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	5.8
Total man months used in the last 18 months	0
% man month used	0
Description of the activities	
6. summary of future actions during the next 18 months	
Incorporate the Logo of JERICO-NEXT on the webpage Make more attractive and useful webpage of NOMOS Set up a Google analytics for statistics Set up a system to trace the data use, publications and meeting attendance	

Assessment of Virtual access provider (WP6)	
name of the organisation	**Hellenic Centre for Marine Research (HCMR) – POSEIDON System**
1. Description of the portal	
Address	http://www.poseidon.hcmr.gr
Creation date	18-12-2008 (updated in several modules during 2015)
Language	English
Description	1. The data recorded by the oceanographic platforms operate in the Aegean and the Ionian Seas (fixed stations, ferry box system, gliders) are released through the POSEIDON portal. Physical and biochemical parameters of the marine environment as well as atmospheric parameters in the fixed station locations are available **Real time data provision – No registration** 2.The online POSEIDON database contains the data recorded by the insitu platforms offering also downloading functions for the whole data set **Delayed mode data provision – Registration required** 3. The forecasting module of the POSEIDON system consists of four numerical models that provide in daily basis forecasts regarding the atmospheric, sea state, hydrodynamic and ecological conditions of the Eastern Mediterranean

	Five days forecast for the marine conditions in the Eastern Mediterranean – Freely available	
Access to the data	http://www.poseidon.hcmr.gr (Real time data and forecasts) http://www.poseidon.hcmr.gr, the Data Base tab leads to the POSEIDON Online Data base	
Link to another webportal	Data from POSEIDON platforms are uploaded in daily basis in CMEMS and EMODNET-Physics portals	
2. Statistics concerning the flow of information		
Statistical tool	Google Analytics	
Period	1-11-2015 to 30-4-2017	
Acquisitions	Registered users in the Online Data base	235
Pageviews	Weather forecast (Eastern Med) Sailing Forecast (Eastern Med) Real time online data	23.233.260 2.562.242 431.633
Unique pageviews	Weather forecast (Eastern Med) Sailing Forecast (Eastern Med) Real time online data	19.016.951 2.193.607 336.888
Avg. Time on Page	Weather forecast (Eastern Med) Sailing Forecast (Eastern Med) Real time online data	235 secs 194 secs 68 secs
Bounce Rate	Weather forecast (Eastern Med) Sailing Forecast (Eastern Med) Real time online data	71% 62% 38%
Downloads	Volume of data downloading through the online data base which hosts the delayed mode POSEIDON buoy data	25 GB
Origin of visitor	Number of countries	51
10 Top countries	Numbers indicate the user sessions Greece (14.283.274) Turkey (8.620.436) Ukraine (136.024) Russia (125.151) Georgia (99.380) Germany (83.705) United Kingdom (72.003) Bulgaria (67.773) Romania (65.711)	 59.3% 35.8% 5.65% 5.20% 4.12% 3.47% 2.99% 2.81%

	Italy (51.486)	2.73% 2.13%
Comments		
What did you like to improve in the next 18 months	During the next 18 months the web site will be totally redesigned providing state of the art disseminating facilities.	
3. Description of users		
The description refers to the registered users only	Science – 162 users Policy – 14 users Industry – 9 users Society – 40 users	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
No information		No information
comments	No data DOI is available	
What did you like to improve in the next 18 months	Digital signatures will be attached to the data	
4.1.2. Publications		
Kassis D., Korres G., Petihakis G. and L. Perivoliotis, 2015: Hydrodynamic variability of the Cretan Sea derived from Argo float profiles and multi-parametric buoy measurements during 2010-2012. Ocean Dynamics, 65(12), 1585-1601. DOI 10.1007/s10236-015-0892-0		
Zacharioudaki, A., G. Korres and L. Perivoliotis, 2015. Wave climate of the Hellenic Seas obtained from a wave hindcast for the period 1960–2001. Ocean Dynamics: Volume 65, Issue 6 (2015), Page 795-816.		
Korres, G., M. Ntoumas, M. Potiris and G. Petihakis, 2014.Assimilating Ferry Box data into the Aegean Sea model. Journal of Marine Systems, 140 (2014) 59–72		
Lykousis, V., Nittis, K., Ballas, D., Perivoliotis, L., Kassis, D., Pagonis, P., Sakellariou, D., 2015. The Hellenic deep sea observatory: Science objectives and implementation, in: SEAFLOOR OBSERVATORIES, Springer Praxis Books. Springer Berlin Heidelberg, pp. 81–103.		
comments	Selective recent publications based on POSEIDON data known to HCMR. Not possible to trace all the publications that may use POSEIDON data	
What did you like to improve in the next 18 months		
4.1.3. Conferences or meeting		

Kassis, D., Konstantinidou, A., Perivoliotis, L., Korres, G., 2015: Inter-comparing numerical model simulations in the Ionian Sea with Argo T/S profiles for the period 2008-2012. In proceedings of the 11th Panhellenic Symposium on Oceanography and Fisheries, p.945-948, ISBN 978-960-9798-08-2	
Kassis D., Perivoliotis L. & G. Korres, 2014: Greek Argo: Towards monitoring the Eastern Mediterranean - First deployments preliminary results and future planning. In proceedings of the 7th International Conference on EuroGOOS, Lisbon – Portugal, 28-30 October 2014	
	There is no system to record conference or meeting attendance
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
Kassis D., "Operational in-situ monitoring of the Greek seas as a tool to describe hydrodynamic variability and its effect on the biochemical distribution" National Technical University of Athens, pp. 255, Supervisor: Prof. G. Traintafyllou, Athens, December 2016	
4.2. Policy	
4.2.1. National and European framework	
Participation in the Copernicus Marine Environment Monitoring Service (CMEMS) Implementation of WFD in Greece Implementation of MSFD in Greece Greek Monitoring program for coastal waters	
4.2.2. Meetings	
Participation in the annual meetings of the MonGOOS (Mediterranean Operational Network for the Global Ocean Observing System) in 2015 and 2016. HCMR has the leading of the MonGOOS Data Working Group	
comments	HCMR (POSEIDON team) has the responsibility for the operation of the CMEMS Mediterranean Insitu Thematic Assembly Center (TAC)
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	4
Type of industry	Consultancy and marine industry
What kind of services did they create or improve with the data	Assessment studies, validation of remote sensor measurements
comments	
What did you like to improve in the next 18 months	The communication with industry should be further improved
4.4. Society	
Number of contacts	No permanent links established
Type of societal activity	
What kind of services did they create or improve with the data	

comments	Several contacts made by entities and citizens regarding the understanding and the use of the provided data and services
What did you like to improve in the next 18 months	More effective communication procedures should be established with entities and citizens that are dealing with the marine environment
5. what has been done the last 18 months	
Total man months	20.8
Total man months used in the last 18 months	6.5
% man month used	31,25%
Description of the activities	Further advancement of the existing QC data procedures, developing tools for automatic data provision to European and International Data Banks. Installation of a new data base which provide higher capacity and optimized performance
6. summary of future actions during the next 18 months	
- Redesign of the web portal - Implementation of APIs for easier access both to recorded data and to marine forecasts - Enhance the QC procedure of the collected biochemical data	

Assessment of Virtual access provider (WP6)	
name of the organisation	SOCIB, BALEARIC ISLANDS COASTAL OBSERVING AND FORECASTING SYSTEM
1. Description of the portal	
Address	https://www.socib.es
Creation date	13-06-2017
Language	English

Description	**SOCIB provides world-class quality controlled metocean datasets, in both real time and delayed mode, from across its multi-platform coastal to open ocean observing & forecasting system. Including physical and biogeochemical variables from platforms such as:** • Moorings • Gliders and lagrangian platforms (drifters and Argo floats) • HF Radar • Beach evolution from beach monitoring video cameras • and High-resolution ocean forecasts for parameters like sea state, waves and currents for the Western Mediterranean region (WMOP) SOCIB's Data Centre provides access to all these data sets and also develops key tools for visualising the datasets.	
Access to the data	http://thredds.socib.es/thredds/catalog.html	
Link to another webportal	EMODnet-physics, MonGOOS, CMEMS	
2. Statistics concerning the flow of information		
Statistical tool	Google analytics Other tool for downloads	
Period	1 October 2015 – 03 May 2017	
Acquisitions	Direct (website directly): Organic search (key words in Google): Social (media): facebook twiter blogger Referral (total): Referral: JERICO-NEXT	2.640 301 85 52 6 27 3.447 6
Pageviews	page could be viewed several times during the same session	186.313
Unique pageviews	Page views one time per session	136.702
Avg. Time on Page	h: mn: s	00:01:38
Bounce Rate	Visitors who did not take any further action	32.77 %
Downloads	Data	26% (*)
Origin of visitor	Number of countries	73

10 Top countries	**Spain (4.963)** **Algeria (247)** **Italy (203)** **France (144)** **United States (119)** **Portugal (90)** **United Kingdom (64)** **Greece (57)** **Netherlands (57)** **Germany (56)**	76.67% 3.82% 3.14% 2.22% 1.84% 1.39% 0.99% 0.88% 0.88% 0.87%
Comments	These data do not include the visits from SOCIB (*) SOCIB doesn't currently have a manner to track direct data downloads. However the ratio between the data catalog access and data access (i.e. followed link to a specific data file) may serve as a proxy for the data download. The ratio for number of visited pages between data catalog access and data access for the last 20 month is 26%.	
What did you like to improve in the next 18 months	Improve data access statistics, we are working on a methodology to track data downloads by dataset and volume. Automate statistics report generation for data access if possible. Incorporate the Logo of JERICO-NEXT on the webpage. Working towards the incorporation of more real-time datasets in EMODnet Physics and MonGOOS. New SOCIB website under development, launch planned for 2017, will include products catalogue and other end user focused content.	
3. Description of users		
No information available for this report, started collecting data (using Google Analytics functions) for next report.		
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
No information		No information
comments	There is no doi system for SOCIB datasets, hence there is no link between doi-data and doi-publication.	

What did you like to improve in the next 18 months	Creating a doi system across SOCIB data sets is currently under discussion.

4.1.2. Publications

Cotroneo, Y.; G. Aulicino; S. Ruiz; A. Pascual; G. Budillon; G. Fusco; J. Tintorè. 2016. Glider and satellite high resolution monitoring of a mesoscale eddy in the Algerian basin: effects on the mixed layer depth and biochemistry. Journal of Marine Systems, under review.

Troupin, C., Beltran, J.P., Heslop, E., Torner, M., Garau, B., Allen, J., Ruiz, S., Tintoré, J. : 2016. A toolbox for glider data processing and management. Methods in Oceanography, Vol. 13-14, Pag. 13-23. doi:10.1016/j.mio.2016.01.001

Alvarez-Berastegui D., Hidalgo J.M., Tugores M.P., Aparicio A., Ciannelli L., Reglero P., Balbín R., Juza M.,Mourre B., Pascual A.,Lopez-Jurado J.L., García A., Rodriguez JM, Tintoré J., Alemany F. 2016. Pelagic seascape ecology for operational fisheries oceanography: modeling and predicting spawning distribution of Atlantic bluefin tuna in western Mediterranean. ICES Journal of Marine Science 73, 1851-1862. doi: 10.1093/icesjms/fsw041.

Juza, M., Mourre, B., Renault, L., Gómara, S., Sebastián, K., Lora, S., Beltran, J.P., Frontera, B., Garau, B., Troupin, C., Torner, M., Heslop, E., Casas, B., Escudier, R., Vizoso, G., Tintoré, J. 2016. SOCIB operational ocean forecasting system and multiplatform validation in the Western Mediterranean Sea. Jounral of Operational Oceanography 9, 155-166. doi :10.1080/1755876X.2015.1117764

Juza, M., R. Escudier, A. Pascual, M.-I. Pujol, C. Troupin, B. Mourre, and J. Tintoré, 2016: « Improvement of reprocessed altimetry absolute dynamic topography: the Western Alboran Gyre variability ». Advances in Space Research, 58, 277-288, http://dx.doi.org/10.1016/j.asr.2016.05.026

Escudier, R., B. Mourre, M. Juza, and J. Tintoré, 2016: « Sub-surface circulation and mesoscale variability in the Algerian sub-basin from altimeter-derived eddy trajectories ». Journal of Geophysical Research, 121, 6310-6322, doi:10.1002/2016JC011760

Capó E., A.Orfila, Sayol J.-M., Conti D., Juza, M., Ruiz S., Sotillo M.G., García-Ladona E., Simarro G., Mourre B. and Tintoré J. (2016). Assessment of operational models in the Balearic Sea during the MEDESS experiment. Deep Sea Research II, 133, 118-131, doi:10.1016/j.dsr2.2016.03.009

Juza M., Escudier R., Pascual A., Pujol M.-I., Taburet G., Troupin C., Mourre B. and J. Tintoré (2016). Impacts of reprocessed altimetry on the surface circulation and variability of the Western Alboran Gyre. Advances in Space Research, 58(3), 277-288, doi:10.1016/j.asr.2016.05.026

Escudier R., L. Renault, A. Pascual, P. Brasseur, D. Chelton, and J. Beuvier (2016). Eddy properties in the Western Mediterranean Sea from satellite altimetry and a numerical simulation. J. Geophys. Res. Oceans, 121, 3990–4006, doi:10.1002/2015JC011371.

Oguz T., Mourre B. and J. Tintoré (2016). Upstream control of the frontal jet regulating plankton production in the Alboran Sea (Western Mediterranean). Journal of Geophysical Research – Oceans, 121(9), 7159-7175, doi : 10.1002/2016JC011667

Sotillo, M. G., Garcia-Ladona, E., Orfila, A., Rodríguez-Rubio, P., Maraver, J. C., Conti, D., Padorno, E., Jiménez, J. A., Capó, E., Pérez, F., Sayol, J. M., de los Santos, F. J., Amo, A., Rietz, A., Troupin, C., Tintore, J., and Álvarez-Fanjul, E.: The MEDESS-GIB database: tracking the Atlantic water inflow, Earth Syst. Sci. Data, 8, 141-149, doi:10.5194/essd-8-141-2016, 2016.

Juza, M., B. Mourre, J.-M. Lellouche, M. Tonani, and J. Tintoré. 2015. From basin to sub-basin scale assessment and intercomparison of numerical simulations in the Western Mediterranean Sea. Journal of Marine Systems, 149, 36-49, doi:10.1016/j.jmarsys.2015.04.010.

Pascual, A. Lana, C. Troupin, S. Ruiz, Y Faugère, R. Escudier and J. Tintoré. 2015. Assessing SARAL/Altika near-real time data in the coastal zone: comparisons with HF Radar and Jason-2 observations. Marine Geodesy 38 (1) p. 260-276 Doi.: 10.1080/01490419.2015.1019656.
Zaragoza, A Quetglas, M Hidalgo, D Álvarez-Berastegui, R Balbín, F Alemany. 2015. Effects of contrasting oceanographic conditions on the spatiotemporal distribution of Mediterranean cephalopod paralarvae. Hydrobiologia 749: 1-14. 2015
Capo, E., J.M. Sayol, D. Conti, M. Juza, S. Ruiz, M.G. Sotillo, E. García-Ladona, G. Simarro, B. Mourre, J. Tintoré, and A. Orfila, 2015: « Assessment of operational models in the Balearic Sea during the MEDESS experiment ». Deep Sea Research Part II, doi:10.1016/j.dsr2.2016.03.009.

comments	
What did you like to improve in the next 18 monthsCreate a link between doi-data and doi-publication when SOCIB doi for data policy implimented	Create a link between doi-data and doi-publication when SOCIB doi for data policy implimented

4.1.3. Conferences or meeting
C. Troupin et al, presentation of Communication and Training activities, 23-24/09/2015, *1st CMEMS INSTAC plenary meeting* , Bruxelles, Belgium.
C. Troupin, 1st ODIP-II Workshop 28/09 – 01/10/2015, Paris, France.
C. Troupin, CMEMS workshop on cross-cutting activities for Product Quality and Multi-Year product, 21-23/10/2015, Ramonville, France.
C. Troupin, CMES Regional Users Training Workshops for mediterranean region. 3-4/12/2015, La Spezia, Italy.
C. Troupin, CMEMS Regional Users Training Workshops for IBI region, 10-11/12/2015, Lisboa, Portugal.
E. Reyes and C. Troupin, HF Radar system in SOCIB, HF Radar Workshop (Jerico-Next), 9-11/03/2016, Spain
F. Manzano *et al.*, "*CMEMS (Copernicus Marine Environment Monitoring Service) In Situ Thematic Assembly Centre: A service for operational Oceanography*", sesión "*Informatics in Oceanography and Ocean Science*". 20/04/2017, EGU 2016, poster about Medclic project.
B. Frontera, "*Leaflet TimeDimension*", 12/05/2016, ESIP (Federation of Earth Science Information Partners) webinar.
C. Troupin, I. Serra, "*Indicators and monitoring tool: the INSTAC Dashboard*" and "*Communication & training activities*", 18-20/05/2016 CMEMS INSTAC 2nd Plenary meeting, Hamburg, Germany.
B. Frontera, "*Leaflet TimeDimension, eso se anima*", 24-26/05/2016, 10th Conference de SIG Libre y 2nd International QGIS User and Developer Conference, Girona, Spain.
C. Troupin et al, "*Submesoscale Processes: Mechanisms, Implications and new Frontiers*", 23-27/05/2016, 48th Liège Colloquium on Ocean Dynamics.
C. Troupin et al, Poster about glider toolbox (https://github.com/socib/glider_toolbox), 26-29/09/2016, 7th EGO conference on autonomous ocean gliders and their applications.

C. Troupin and C. Munoz, "*Data processing and visualization at the Balearic Islands Coastal Observing and Forecasting System (SOCIB)*" and poster "*Medclic: the Mediterranean in one click*", 11-13/10/2016, IMDIS2016 , Gdansk, Poland.	
C. Munoz 3rd ODIP-II Workshop 07-10/03/2017, Hobart, Australia.	
P.Rotllan, S.Ringheim and J.Linders, "Copernicus Marine Service Workshop, Monitoring and Forecasting the Arctic and Baltic Seas". Presentation "Currents/Temperature Observation products in shipping/offshore activities" and hands-on "In Situ Observation products – Practical exercices". 01-02.06.2017, Nor-Shipping2017, Lillestrom, Norway.	
P. Rotllan, "CMEMS Annual Operation Review". Presentation "TACs presentation on Communication & Training: IN SITU", 09-11/05/2017,CMEMS-AOR2017 , Heraklion, Greece.	
comments	These are only the data management related meetings. There is no system to record conference or meeting attendance.
What did you like to improve in the next 18 months	Centralize a system to record conference or meeting attendance.
4.1.4. PhD Thesis	
No information	
4.2. Policy	
4.2.1. National and European framework	
EuroGOOS Euro-Argo	
4.2.2. Meetings	
comments	There is no system to record conference or meeting attendance.
What did you like to improve in the next 18 months	Centralize a system to record conference or meeting attendance.
4.3. small, medium and large companies and consultancy	
Number of contacts	6
Type of industry	Public sector, Tourism.
What kind of services did they create or improve with the data	Validation of models. Beach state information for hotel customers.
comments	There is no system to record number of contacts. Underestimation of the contacts.
What did you like to improve in the next 18 months	Centralize a system to record number of contacts.
4.4. Society	
Number of contacts	No information available for this report. It will be for next report.

Type of societal activity	Education, meetings with sustainable fisheries scientists and beach lifeguards and emergency services for product development.
What kind of services did they create or improve with the data	Marine divulgation making available to society the advances in new oceanography through a collaborative effort involving scientists and educators in the ocean sciences education community. http://www.medclic.es/en/
comments	There is no system to record number of contacts.
What did you like to improve in the next 18 months	Centralize a system to record number of contacts.
5. what has been done the last 18 months	
Total man months	8.8
Total man months used in the last 18 months	5
% man month used	56.81
Description of the activities	• Documentation on SOCIB products. • Documentation on SOCIB past dissemination activity relative to data or service access since JN started in september 2015. • Google Analytics training. Dashboards and reports configuration. • Start software tool development for SOCIB data access statistics. • Improve dataflow from SOCIB towards EMODnet, MonGOOS and CMEMS. • Establish metadata flow towards ICES with cruise summary reports. • Development of a new API for data access and consultation that will be available in SOCIB new website.
6. summary of future actions during the next 18 months	
• Finish software tool development for SOCIB data access statistics if possible. • Improve dataflow from SOCIB towards EMODnet, MonGOOS and CMEMS. • Create doi system for SOCIB data sets if possible. • Create a link between doi-data and doi-publication if possible. • Incorporate the Logo of JERICO-NEXT on the new SOCIB webpage. • Early versions of new societal sector products available. • Centralize a system to record number of contacts for society, companies and consultancy if possible. • Centralize a system to record conference or meeting attendance if possible.	

Assessment of Virtual access provider (WP6)

name of the organisation	**CNRS – EPOC**	
6. Description of the portal		
Address	https://spiarcbase.epoc.u-bordeaux1.fr/	
Creation date	2013	
Language	English	
Description	**SpiArcBase** is a software developed for the treatment of Sediment Profile images (SPIs). It has been conceived to improve the objectivity of extracted information (especially the apparent Redox Potential Discontinuity (aRPD). The software presents a friendly graphical user interface designed to enhance the interpretation of features observed on SPIs in an objective manner and to facilitate image management and structures visualization via a data base. Our portal allows to download SpiArcBase and contact the developers in order to use it properly.	
Access to the data	https://spiarcbase.epoc.u-bordeaux1.fr/Download.html	
Link to another webportal	EPOC and JERICONEXT	
2. Statistics concerning the flow of information		
Statistical tool	Mail confirmation (someone has downloaded the software) and Piwik	
Period	Mail confirmation (since September 2015), Piwik (February 2017-Mars 2017)	
Acquisitions	Mail Confirmation Total: 25	Piwik Total: 22 Direct:13 Site web: 6 Search engine:3
Pageviews		65
Unique pageviews		35
Avg. Time on Page		2min 52seconds
Bounce Rate		41%
Downloads	17	Not measured
Origin of visitor	8 countries	7 countries
10 Top countries	Belgium:5 USA: 4 Brazil: 3 China: 2 Tunis: 1 France: 1 Netherlands: 1	China: 5 France: 5 Belgium: 4 United Kingdom: 3 Brazil: 2 Bulgaria: 2 Netherlands: 1

Comments	Please note there are **two sources of information** that have started at different dates	
What did you like to improve in the next 18 months	Incorporate JERICO-Next logo Inform possible users with new features on recent versions of software If affordable propose a workshop on the use of SpiArcBase	
3. Description of users		
	Mail confirmation: Research institute: 9 Industry: 1 Governmental agency: 1 Consultancy: 1	Piwik: Information not given
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	Description	**DOI (publication)**
	Assessment of ecological impacts caused by physical pressures on benthic habitats: fisheries and extraction (IMPECAPE)	
	Biodiversity and functioning of the benthic ecosystem in the West Gironde mud flat	
	Characterization of the pelagic and benthic compartments of the Admiralty Bay and oceanic areas adjacent to the Antarctic Peninsula	
comments	It is included here research projects where Spiarcbase is being used	
What did you like to improve in the next 18 months	We will try to gather more information concerning this point	
4.1.2. Publications		
Romero-Ramirez A, Bonifácio P, Labrune C, Sardá R, Amouroux JM, Bellan G, Duchêne JC, Hermand R, Karakassis I, Dounas C, Grémare A. Long-term (1998-2010) large-scale comparison of the ecological quality status of gulf of lions (NW Mediterranean) benthic habitats. Marine Pollution Bulletin 102, 2016, (1):102-113		
Seitaj, D., Sulu-Gambari, F., Burdorf, L. D. W., Romero-Ramirez, A., Maire, O., Malkin, S. Y., Slomp, C. P. and Meysman, F. J. R. Sedimentary oxygen dynamics in a seasonally hypoxic basin, Limnology and Oceanography 62, 2017, 452–473		
comments	Difficult to trace	
What did you like to improve in the next 18 months		

4.1.3. Conferences or meeting	
There is no system to record conference or meeting attendance.	
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
Rémy Sinays, « Biodiversité et fonctionnement de l'écosystème benthique dans la vasière Ouest Gironde » (Sept 2016-Sept. 2019)	
4.2. Policy	
4.2.1. National and European framework	
MSFD: D1, D6 (French national framework)	
4.2.2. Meetings	
No information	
Comments	
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	1
Type of industry	Consultancy
What kind of services did they create or improve with the data	
Comments	Difficult to know
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	
Type of societal activity	
What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	8
Total man months used in the last 18 months	2

% man month used	25%
Description of the activities	Installation of Piwik as a tool for web analytics Assistance for the use of a software in terms of image analysis techniques and data management procedures as well as from the ecological point of view with Dr. Adriana Dalto (Universidade Federal do Rio de Janeiro) (Helpdesk) Communication, reporting and JERICONEXT meetings
6. summary of future actions during the next 18 months	
Contacting the people that have downloaded the software in order to: - Inform them about the possibility of having a helpdesk via JERICONEXT - Communicate the new features included in the actual version of SpiArcBase - Know if they would be interested on a workshop Make the site more attractive Study the possibilities in order to trace in a better manner the use of spiarcbase	

Assessment of Virtual access provider (WP6)		
name of the organisation	**Norwegian Institute for Water Research (NIVA)**	
1. Description of the portal		
Address	http://ferrydata.hzg.de	
Creation date	September 2015	
Language	English	
Description	Legacy and selected real-time datasets from NorFerry FerryBox (Oslo-Kiel, Bergen-Kirkenes, Tromsø-Svalbard)	
Access to the data	http://ferrydata.hzg.de; also, users can sign up to be “advanced users” to directly download datasets	
Link to another webportal	Will be available on EMODnet-Physics, working to sort out data flow bugs	
2. Statistics concerning the flow of information		
Statistical tool	Google analytics	
Period	n/a	
Acquisitions	n/a – will be developed between M18-M24	
Pageviews		
Unique pageviews		
Avg. Time on Page		
Bounce Rate		

Downloads		
Origin of visitor		
10 Top countries		
Comments		
What did you like to improve in the next 18 months	We will begin to use Google Analytics to track data usage	
3. Description of users		
To be determined – mostly researchers, industry, and society.		
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
No information		No information
comments	No DOI's have been created	
What did you like to improve in the next 18 months	We will begin the DOI creation process	
4.1.2. Publications		
n/a		
comments	n/a	
What did you like to improve in the next 18 months	Publications related to VA data are under preparation.	
4.1.3. Conferences or meeting		
	Kai Sørensen et al. Norwegian Ferrybox network for monitoring of biogeochemical variables. 7th FerryBox Workshop, Crete, Greece, 7-8 April 2016. Pierre Jaccard et al. Correction and quality control of hyperspectral measurements performed from a Ferrybox platform. 7th FerryBox Workshop, Crete, Greece, 7-8 April 2016. Andrew King et al. Ferrybox underway monitoring of pCO2 and pH. 7th FerryBox Workshop, Crete, Greece, 7-8 April 2016.	
What did you like to improve in the next 18 months	Create protocol for cross-referencing data usage in conference presentations.	
4.1.4. PhD Thesis		
n/a		

4.2. Policy	
4.2.1. National and European framework	
No information	
4.2.2. Meetings	
No information	
Comments	
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	
Type of industry	
What kind of services did they create or improve with the data	
Comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	
Type of societal activity	
What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	
Total man months used in the last 18 months	
% man month used	
Description of the activities	
6. summary of future actions during the next 18 months	
Update data virtual access with HZG for NorFerry generated data. Discontinue Virtual Access of NIVA Research Station (NRS). Install and develop Google Analytics for ship-specific data access. Create JERICO-NEXT specific website for data access. Receive explicit directions from WP6 lead on further Virtual Access procedures and requirements.	

Assessment of Virtual access provider (WP6)		
name of the organisation	**Finnish Meteorological Institute (FMI)**	
1. Description of the portal		
Address	http://swell.fmi.fi/Uto/	
Creation date	09-03-2017	
Language	English	
Description	Real-time data from Utö Atmospheric and Marine Research station, including e.g. weather station, oceanographic, wave and current data, CO_2 concentration, and phytoplankton data. Data are shown as graphs, latest data values, and csv files available for download. **Access with no registration**	
Access to the data	Direct from http://swell.fmi.fi/Uto/	
Link to another webportal		
2. Statistics concerning the flow of information		
Statistical tool	Google Analytics	
Period	09-03-2017 to 01-05-2017	
Acquisitions	Direct (website directly): Referral (total): en.ilmatieteenlaitos.fi Social (media): Facebook Organic search:	574 61 44 (72.13%) 27 27 (100%) 17
Pageviews	page could be viewed several times during the same session	8,922
Unique pageviews	Page views one time per session	2,700
Avg. Time on Page	h: mn: s	00:05:23
Bounce Rate	Visitors who did not take any further action	38.14%
Downloads	Data	
Origin of visitor	Number of countries	15

10 Top countries	Finland (649) Brazil (6) United Kingdom (6) United States (3) Japan (2) Mexico (2) Netherlands (2) Switzerland (1) Cyprus (1) Gabon (1)	95.58% 0.88% 0.88% 0.44% 0.29% 0.29% 0.29% 0.15% 0.15% 0.15%
Comments	These data include the visits from FMI.	
What did you like to improve in the next 18 months	Add metadata: measurement/station descriptions and other relevant information. Include new data when new sensors are installed on the Utö research station. Improve the data download facility; provide ftp access to data.	
3. Description of users		
	We do not track the users. However, google analytics give some hints of users: Data is frequently used by e.g. "The Finnish Consumer Disputes Board", a company "Finnish state pilotage enterprise". However, during the first months, the main users have been the local population living in the Archipelago Sea. In addition, it is possible the find out part of the users being sea paddlers, and people from a city (Lappeenranta) with a university specializing on renewable energy research.	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data)	We haven't used so much data yet as we are still building the QAQC protocols for measurements.	**DOI (publication)**
comments		

What did you like to improve in the next 18 months	We will increase the types of data provided, as soon as we get the QC-protocols reliable enough and know more on data quality as it may be influenced especially by biofouling leading to erroneous data.
4.1.2. Publications	
comments	No publications yet, as we launched the www-page only early this year.
What did you like to improve in the next 18 months	We will try to use the data in joint publications. Currently we are doing one paper together with German authors.
4.1.3. Conferences or meeting	
An oral presentation in 11th Baltic Sea Science Congress, Rostock, Germany (presentation on 15.6.2017) using the data: Laakso, L., Mikkonen, S., Alenius, P., Drebs, A., Pirinen, P.: Trends of sea water column properties and meteorological variables based on more than 100 years of observations at Utö Island, Baltic Sea (https://www.io-warnemuende.de/bssc2017-programme.html)	
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
No PhD-thesis yet.	
4.2. Policy	
4.2.1. National and European framework	
No information	
4.2.2. Meetings	
No information	
Comments	
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	1
Type of industry	Marine construction
What kind of services did they create or improve with the data	Destia ltd is building a new harbour on the Utö island and they asked for data to support planning the underwater work done by divers.
Comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	
Type of societal activity	

What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	We have the link to the www-page from FMI www-page with average 280.000 different daily visitors. Dissemination is also provided through social media, e.g. Facebook and Twitter. In addition, we recently released a video clip advertising Utö station as a part of FMI observations (English version: https://m.youtube.com/watch?v=ndG5oszOwtk) and we have also published earlier an interview advertising our work at Utö (Only in Finnish: https://www.youtube.com/watch?v=RLXrGPYSrqc&feature=youtu.be)
5. what has been done the last 18 months	
Total man months	10.56
Total man months used in the last 18 months	4.57
% man month used	43%
Description of the activities	During the first 18 months, we focused on getting the data quality high enough to be able to provide it publicly. The work included building up the data transfer systems, QAQC protocols for different observations and programming the www-page where users can access data. In contrast to many other VA providers in Jerico-next, we did not have existing way/www-page to deliver the data, so that was our focus.
6. summary of future actions during the next 18 months	
We will improve the data quality by improving the automated QC protocols; more instruments will be added as soon we have developed methods for QA. One major development will be the addition of a cabled profiler in autumn 2017 or spring 2018 (exact time depends on the deployment date, which is dependent on weather and available ship time windows, together with some technical issues we still need to solve) . See also “comments” in Section 2 above	

Assessment of Virtual access provider (WP6)	
name of the organisation	**HZG**
1. Description of the portal	
Address	http://codm.hzg.de/codm
Creation date	01-01-2011
Language	English
Description	CODM as well as COSYNA data and metadata are described in http://www.ocean-sci.net/12/909/2016/os-12-909-2016.pdf CODM is observed property and web-service oriented.

	All data are freely available. An automatic registration process exists without any restrictions	
Access to the data	Direct from http://codm.hzg.de/codm	
Link to another webportal	EMODnet-physics COSYNA TSDATA, time series at fixed positions COSYNA FERRYDATA, database for Ferryboxes on ships (fixed routes) COSYNA SURVEYDATA, database for underway data on surveys	
2. Statistics concerning the flow of information		
Statistical tool	Self developed Java/PLSQL code based on different system logs	
Period	1-1-2015 to 31-05-2017	
Acquisitions	Total accesses several per page: Total sum of downloaded data: Users including multiple registered users:	36656142 580 GB 767
Pageviews	page could be viewed several times during the same session	9460426
Unique pageviews	Page views one time per session	NA
Avg. Time on Page	h: mn: s	NA
Bounce Rate	Visitors who did not take any further action	15%
Downloads (10 Top countries)	Germany Denmark UK Italy China Spain USA Netherlands Oman France	531.6 GB 25.6 GB 7.6 GB 4.5 GB 4..2 GB 2.2 GB 2.1 GB 299 MB 190 MB 120 MB
Origin of visitor	Number of countries	55

10 Top countries (Accesses)	Germany UK Netherlands Italy Norway China France Denmark Spain USA	58 % 4.8 % 2.8 % 2.1 % 2.1 % 1.9 % 1.6 % 1.5 % 1.5 % 1.4 %
Comments	These data include the visits from HZG	
What did you like to improve in the next 18 months	Migrating the NOKIS based metadata system to a CDI and SensorML based system	
3. Description of users		
Categories for downloads	Science Administration and authorities General public Industry and private business	77.7 % 11.4 % 5.7 % 5.0 %
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
doi: 10.17616/R3K02T	DOI to the COSYNA Data Portal	doi: 10.5194/os-12-909-2016
doi: 10.1594/PANGAEA.876437	Sea surface current deduced from Doppler-shift of high-frequency radar backscatter, 2010-10-29 to 2016-12-31.	
comments		
What did you like to improve in the next 18 months	Additional data publications for FerryBoxes, Wadden sea poles ... will be published	
4.1.2. Publications		
Gisbert Breitbach, Hajo Krasemann, Daniel Behr, Steffen Beringer, Uwe Lange, Nhan Vo, and Friedhelm Schroeder. Accessing diverse data comprehensively – CODM, the COSYNA data portal. Ocean Sci., 12, 909-923, 2016; doi:10.5194/os-12-909-2016		

Christiane A. Eschenbach. Bridging the gap between observational oceanography and users. Ocean Sci., 13, 161-173, 2017; doi:10.5194/os-13-161-2017	
comments	
What did you like to improve in the next 18 months	
4.1.3. Conferences or meeting	
Gisbert Breitbach et al. - A common European database for underway data from FerryBoxes, IMDIS 2016 Gdansk 12. Oct 2016 (http://imdis2016.seadatanet.org/content/download/103957/1497265/file/S3P02_IMDIS2016_Breitbach_FerryBoxes.pdf?version=2) Gisbert Breitbach et al. Proposal for a Common European FerryBox Database. 7th FerryBox workshop Heraklion, Apr 2016 (www.ferrybox.org) Wilhelm Petersen et al. FerryBox Task Team and European FerryBox Data Portal, 6th Session of the IODE Steering Group for the GOSUD Project, Oostende, Nov 2016 Wilhelm Petersen & FerryBox Task Team: FerryBox Community and JCOMM-SOT. 9th session of JCOMM Ship Observation Team (SOT), London March 2017	
comments	
What did you like to improve in the next 18 months	
4.1.4. PhD Thesis	
No information	
4.2. Policy	
4.2.1. National and European framework	
No information	
4.2.2. Meetings	
No information	
Comments	
What did you like to improve in the next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	9 interviewees
Type of industry	off shore wind energy sector (producers, operators, consultants, insurance)
What kind of services did they create or improve with the data	Reliable data to reduce costs.
Comments	
What did you like to improve in the next 18 months	Extension of the HZG FerryBox database as common European FerryBox database
4.4. Society	
Number of contacts	No information
Type of societal activity	No information

What kind of services did they create or improve with the data	No information
comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	8.64
Total man months used in the last 18 months	Man months will be calculated for the next period
% man month used	None
Description of the activities	Establishing tools (Java/PLSQL) for monitoring the access to the COSYNA database, developing and improving tools for quality control and quality assessment of the data
6. summary of future actions during the next 18 months	
Improving algorithms for analysing and quality control, DOI publication of data, further development of data portal and web tools for visualization and data access	

Assessment of Virtual access provider (WP6)	
name of the organisation	**CNR-ISMAR**
7. Description of the portal	
Address	http://radarhf.ismar.cnr.it/
Creation date	01/02/2014
Language	English
Description	The portal is dedicated to **HF radar technology and data**. It shows the last 48-hours **surface current velocity maps** of the coastal area covered by the currently operating HF radar network (Ligurian Sea - Italy), and provides links to the THREDDS server where real time and historical data and metadata are stored in NetCDF format. Surface ocean velocities estimated by HF Radar are representative of the upper 0.3-2.5 meters of the ocean. The radar sites are operated according to Quality Assessment procedures and data are processed for Quality Control. Data access tools are compliant to Open Geospatial Consortium (OGC), Climate and Forecast (CF) convention and INSPIRE directive. The use of netCDF format allows an easy implementation of all the open source services developed by UNIDATA. The THREDDS catalog offers different remote-data-access protocols such as Open-source Project for a Network Data Access Protocol (OpenDaP), Web Coverage Service (WCS), Web Map Service (WMS) (OGS standards), as well as pure HTTP or NetCDF-Subsetter. They allow for metadata interrogation and data download (even sub-setting the dataset in terms of time and space) while embedded clients, such as GODIVA2, NetCDF-JavaToolsUI and Integrated Data Viewer, grant real-time data visualization directly via browser and allow for navigating within the plotted maps, saving images, exporting-importing on Google Earth, generating animations in selected time intervals. The data on the THREDDS catalog are organized in two folders, collecting the hourly current files of the last five days and grouping all the historical data. The two folders are accessible both in aggregated and in non-aggregated configuration.

	Free data access **Free data download**	
Access to the data	Data are directly available at the following links: http://ritmare.artov.isac.cnr.it/thredds/ritmare/CoastalRadarOS/HF_RADAR/Tyrrhenian_Ligurian_Sea/catalog.html http://ritmare.artov.isac.cnr.it/thredds/ritmare/CoastalRadarOS/HF_RADAR/Gulf_of_Manfredonia/catalog.html	
Link to another webportal	Platform data set is automatically attached to EMODNET-Physics (http://www.emodnet-physics.eu/Map/) and to the HFR GEO portal http://cordc.ucsd.edu/projects/mapping/global/	
2. Statistics concerning the flow of information		
Statistical tool	Google Analytics for the web portal (since November 2016) – Awstats log file analyzer for THREDDS server (since January 2016)	
Period	November 1st, 2016 – April 30th, 2017 (web portal only, except traffic data)	
Acquisitions	Direct (website directly): Organic search (key words in Google): Social (media): Twitter Referral (total): Referral: JERICO-NEXT	478 288 633 39% 1200 -
Pageviews	page could be viewed several times during the same session	6147
Unique pageviews	Page views one time per session	2164
Avg. Time on Page	hh:mm:ss	00:01:34
Bounce Rate	Visitors who did not take any further action	30,24%
Downloads	Total amount of data traffic (THREDDS server only)	1571MB
Origin of visitor	Number of countries	36

10 Top countries	Russia (1.375) Italy (929) United States (99) Germany (19) France (12) United Kingdom (12) Austria (10) Saudi Arabia (9) Brazil (7) Spain (6)	53% 36% 4% 0,7% 0,5% 0,4% 0,4% 0,4% 0,3% 0,2%
Comments	Statistics are related to the web portal only, except for download information that are related to the THREDDS server only. Visits from CNR-ISMAR are included. Visits from Russia are most likely originated by bots.	
What did you like to improve in the next 18 months	Develop and provide real-time and delayed-mode products based on surface currents data analysis Advertise the web portal and make it available in a number of related web portal / services (e.g. marine forecast, support for maritime navigation) Ask data downloaders for registration Associate DOI to datasets Incorporate the Logo of JERICO-NEXT on the webpage Move THREDDS server on the same computer as the web portal, in order to have more homogeneous statistics	
3. Description of users		
	Impossible for us to quantify absolute and relative numbers, as we provide data without registration. The information provided are extrapolated from "service provider information" field of Google Analytics and include Universities and research centres, local administrations, meteorological offices.	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	description	**DOI (publication)**
	HFR radial and total velocity data from Ligurian Sea and Gulf of Manfredonia have been used for data assimilation	

	analysis by CMCC (Euro Mediterranean Center on Climate Changes)	
	HFR data analysis was performed by CNR-ISMAR for planning oceanographic campaign in the Ligurian Sea in February 2017	
comments	Since we provide data without registration, it's impossible to track all data users and how they use data in most cases.	
What did you like to improve in the next 18 months	Collaboration with University of Genova for HF radar wave measurement assessment and publication of wave data on the web portal Ask data downloaders for registration Ongoing activity to evaluate the inclusion of HFR data into CMEMS	

4.1.2. Publications

Lorenzo Corgnati, Carlo Mantovani, Annalisa Griffa, Pierluigi Penna, Paolo Celentano, Lucio Bellomo, Daniel F. Carlson and Raffaele D'Adamo (2017) Implementation and validation of the ISMAR High Frequency Coastal Radar Network in the Gulf of Manfredonia (Mediterranean Sea) IEEE JOURNAL OF OCEANIC ENGINEERING - submitted

Rubio A, Mader J, Corgnati L, Mantovani C, Griffa A, Novellino A, Quentin C, Wyatt L, Schulz-Stellenfleth J, Horstmann J, Lorente P, Zambianchi E, Hartnett M, Fernandes C, Zervakis V, Gorringe P, Melet A and Puillat I (2017) HF Radar Activity in European Coastal Seas: Next Steps toward a Pan-European HF Radar Network. Front. Mar. Sci. 4:8. doi: 10.3389/fmars.2017.00008

Bellomo L., Griffa A., Cosoli S., Falco P., Gerin R., Iermano I., Kalampokis A., Kokkini Z., Lana A., Magaldi M. G., Mamoutos I., Mantovani C., Marmain J., Potiris E., Sayol J. M., Barbin Y., Berta M., Borghini M., Bussani A., Corgnati L., Dagneaux Q., Gaggelli J., Guterman P., Mallarino D., Mazzoldi A., Molcard A., Orfila A., Poulain P.-M., Quentin C., Tintoré J., Uttieri M., Vetrano A., Zambianchi E., Zervakis V., 2016. Toward an integrated HF radar network in the Mediterranean Sea to improve search and rescue and oil spill response: the TOSCA project experience. J. Oper. Oceanogr., 8 (2), pp. 95-107, doi:10.1080/1755876X.2015.1087184 (Online ISSN: 1755-8778, Print ISSN: 1755-876X

comments	
What did you like to improve in the next 18 months	

4.1.3. Conferences or meeting

18-19/05/2017 Firenze Italy: Kick-Off meeting of the Ita-Fr Maritime project IMPACT (IMpatto Portuale su aree marine protette: Azioni Cooperative Transfrontaliere)
Activity: presentation of CNR-ISMAR HF radar network and web portal and related scientific activities and potential applications
Type of audience: researchers, stakeholders
Countries addresses: Italy and France
Size audience: approx. 50 persons

23-28/04/2017 EGU2017-7842, Vienna, Austria
Activity: Surface Lagrangian transport in the Adriatic Sea (Mediterranean Sea) from drifters, HF radar and models: implications for fishery and Marine Protected Areas

by Annalisa Griffa et al.
accepted in Session OS2.2 Advances in Understanding of the Multi-Disciplinary Dynamics of the Southern European Seas (Mediterranean and Black Sea)

14-16/03/2017 Galveston, TX, USA: Radiowave Operators Working Group (ROWG) Meeting
Activity: presentation of CNR-ISMAR and European HFR networks
Type of audience: HFR operators and data managers
Countries addresses: worldwide (mostly USA)
Size audience: approx. 50 persons (involved in the US, Taiwan and European HFR networks)

13-15/09/2016 Lerici (SP) Italy: INCREASE HF Radar Experts Workshop
Activity: organization of the workshop
Type of audience: HFR operators and data managers
Countries addresses: European Countries (with some experts invited from USA a Australia HFR networks)
Size audience: approx. 50 persons

28/09/2015 Foggia (Italy): project SSD Pesca, Risultati Basso Adriatico – Final conference
Activity: presentation of "Coastal radar networks for monitoring fishery areas"
Type of audience: local authorities and decision makers
Countries addresses: Italy
Size audience: approx. 50 persons

22-23/09/2015 Heraklion, Crete, Greece: 4th GEO Global HF Radar Task Meeting.
Activity: presentation of "Coordination of coastal radar network at national level: the RITMARE project experience in Italy"
Type of audience: researchers, HFR operators and data managers
Countries addresses: worldwide
Size audience: approx. 40 persons

What did you like to improve in the next 18 months	

4.1.4. PhD Thesis

No information

4.2. Policy

4.2.1. National and European framework

MSFD ->

Coastal observation of chemical and physical parameters with fixed platforms ->

HF radar surface velocity derived products, like monthly current velocity averages and monthly residence times in the Gulf of Manfredonia and monthly current velocity averages and monthly EKE fields in the Ligurian Sea, have been evaluated to fulfil MSFD.

4.2.2. Meetings

No information

Comments	
What did you like to improve in the	

next 18 months	
4.3. small, medium and large companies and consultancy	
Number of contacts	No information
Type of industry	
What kind of services did they create or improve with the data	
comments	Since we provide data without registration, it's impossible to track all data users and how they use data in most cases
What did you like to improve in the next 18 months	Advertise the web portal and its products Ask data downloaders for registration
4.4. Society	
Number of contacts	No information
Type of societal activity	
What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	Advertise the web portal and make it available in a number of related web portal / services (e.g. marine forecast, support for maritime navigation)
5. what has been done the last 18 months	
Total man months	7,6
Total man months used	2,6

in the last 18 months	
% man month used	34%
Description of the activities	- Setup of data processing software, folders structure and file naming conventions for new data coming from recent HFR deployments in summer 2016 - Upgrade and improvement of the real time data processing software to apply new data format and quality control policy - Improvement of the real–time data transmission system from remote HFR stations - Evaluation and application of software tools for generating data access statistics (Google Analytics and Awstats - log file analyzer-) - Setup of a secondary THREDDS server within a server failover strategy
6. summary of future actions during the next 18 months	
- Develop and provide real-time and delayed-mode products based on surface currents data analysis - Collaborate with University of Genova for HF radar wave measurement assessment and publication of wave data on the web portal - Advertise the web portal and make it available in a number of related web portal / services (e.g. marine forecast, support for maritime navigation) - Evaluate links with CMEMS - Ask data downloaders for registration - Associate DOI to datasets - Incorporate the Logo of JERICO-NEXT on the webpage - Move THREDDS server on the same computer as the web portal, in order to have more homogeneous statistics	

Assessment of Virtual access provider (WP6)	
name o organisati	**SYKE**
1. Description of the portal	
Address	1. www.ymparisto.fi/en-US/Sea/What_is_the_state_of_the_Baltic_Sea/Nutrients_and_the_amount_of_algae_in_the%2831561%29 2. http://www.syke.fi/en-US/Research__Development/Research_and_development_projects/Projects/Real_time_alegal_monitoring_in_the_Baltic_Sea_Algline 3. www.jarviwiki.fi/wiki/Alg@line 4. http://www.finmari-infrastructure.fi/ferrybox/
Creation date	1. 2014-10-15 2. 2013-04-23 3. 2016 4. 2016
Languag e	1. English, Swedish and Finnish version available 2. English, Swedish and Finnish version available 3. Finnish 4. English
Descript ion	Description of Algaline, real time algal monitoring in the Baltic sea –project. Pages provide general description and links to RT data visualisation portal (www.jarviwiki.fi/wiki/Alg@line), weekly/monthly updated pages with visualization of state of the sea (www.ymparisto.fi/en-US/Sea/What_is_the_state_of_the_Baltic_Sea/Nutrients_and_the_amount_of_algae_in_the%2831561%29) and to external dataportals
Access to the data	www.jarviwiki.fi/wiki/Alg@line www.ymparisto.fi/en-US/Sea/What_is_the_state_of_the_Baltic_Sea/Nutrients_and_the_amount_of_algae_in_the%2831561%29
Link to another webport al	CMEMS http://marine.copernicus.eu/services-portfolio/access-to-products/?option=com_csw&task=results&advancedsearch-geographical_area[]=advancedsearch-geographical_area-baltic-sea EMODNET

	http://www.emodnet-chemistry.eu/data_access.html	
2. Statistics concerning the flow of information		
Statistical tool	Google Analytics for pages 1. http://www.ymparisto.fi/en-US/Sea/What_is_the_state_of_the_Baltic_Sea/Nutrients_and_the_amount_of_algae_in_the%2831561%29 2. http://www.syke.fi/en-US/Research__Development/Research_and_development_projects/Projects/Real_time_algal_monitoring_in_the_Baltic_Sea_Algline 3. http://www.jarviwiki.fi/wiki/Alg@line 4. http://www.finmari-infrastructure.fi/ferrybox/	
Period	1.9.2015-1.5.2017	
Acquisitions		
Pageviews		1. En:342; Se 142; Fin 453 2. all languages 497 3. 1699 4. not available
Unique pageviews		1. En 270; Se 108; Fin 360 2. all languages 409 3. 1297 4. not available
Avg. Time on Page		1. En 00:03:18; Se 00:03:06; Fin 00:02:44 2. all languages 00:01:57 3. not available 4. not available
Bounce Rate		1. En 76,27 %; Se 64,52 %; Fin 70,46 % 2. all languages 70,61 % 3. not available 4. not available

Downloads		not available
Origin of visitor		not available
10 Top countries		not available
Comments	Some functionalities of google analytics cannot be provided at the time being.	
What did you like to improve in the next 18 months	**We plan following issues:** - **better visualization of the data in RT and NRT** - **more data available (e.g. Silja Serenade data better displayed and new parameters included)** - **updated quality control** - **customized solutions (e.g. ftp/email service) for main data users**	
3. Description of users		
	There is no record of the users. But of course, we know that data is used by environment administration of cities and regions for monitoring and reporting purposes, by scientists looking after the state of the sea and by media and public to follow the state of the sea.	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		

DOI (data)	description	DOI (publication)
	chlorophyll fluorescence, temperature, salinity, and cDOM fluorescence. Nutrients (nitrate, phosphate, silicate) were automatically collected on board utilizing an automated sample carousel containing 24 bottles, and were analyzed at SYKE using methods	doi:10.3389/fmicb.2016.00517 and doi:10.1111/jbi.12722
	Flowthrough records of temperature and salinity. For the determination of the nutrient concentrations 24 samples were taken automatically and further analysed. Timeperiod 2003–2014 using M/S Finnpartner (2003–2006) and M/S Finnmaid (2007–2014),	dx.doi.org/10.1016/j.oceano.2015.07.001
	Chlorophyll a fluorescence data and nutrient data from M/S Finnpartner (2000–2006) and M/S Finnmaid (2007–2014),	doi:10.5194/bg-13-4959-2016
	four cruises in March and April 2013. Water samples were collected during a 48 hour time period for each cruise	doi:10.1111/jbi.12722
	75 water samples collected with an automated refrigerated (4°C) water sampler on ship-of-opportunity MS *Finnmaid* of the Alg@line network were included from 17 transects between Travemünde and Helsinki,(2008-12) using up to 12 water samples per transect. The latter samples were primarily used to characterize the absorption by CDOM.	doi.org/10.1371/journal.pone.0173357
	Water samples were collected once a month from April to October 2012 by using automated flow through systems onboard the commercial ships M/S Finnmaid (Helsinki–Travemünde; stations FM), M/S Silja Serenade (Helsinki–Stockholm; SS) and M/S Victoria I (Tallinn–Stockholm; TS).	doi.org/10.1016/j.jmarsys.2016.10.009.
	The temperature and salinity data of November and December 2014 were used to observe the temporal development of the surface salinity front	dx.doi.org/10.1016/j.jmarsys.2015.03.005

	FRRF field measurements were carried out between April and August 2014 at high spatio-temporal resolution from a ship-of-opportunity: “MS Finnmaid”. In parallel temperature, salinity, turbidity, and fluorescence of CDOM, chlorophyll *a* (chl *a*) and phycocyanin, downwelling irradiance .were measured. water samples samples were analyzed for nutrient concentrations (NO_2^- + NO_3^-, $Si(OH)_4$, PO_4^{3-}), chl *a* concentration and background FRR fluorescence	doi.org/10.1016/j.jmarsys.2017.01.007.
comments		
What did you like to improve in the next 18 months		

4.1.2. Publications

Bunse C, Bertos-Fortis M, Sassenhagen I, et al. Spatio-Temporal Interdependence of Bacteria and Phytoplankton during a Baltic Sea Spring Bloom. *Frontiers in Microbiology*. 2016;7:517. doi:10.3389/fmicb.2016.00517.

Godhe, Sjöqvist, Sildever et al. Physical barriers and environmental gradients cause spatial and temporal genetic differentiation of an extensive algal bloom. Journal of Biogeography (J. Biogeogr.) (2016) 43, 1130–1142 doi:10.1111/jbi.12722

B. Schneider, S. Buecker, S. Kaitala, P. Maunula, N. Wasmund, Characteristics of the spring/summer production in the Mecklenburg Bight (Baltic Sea) as revealed by long-term pCO data, Oceanologia, Volume 57, Issue 4, 2015, Pages 375-385, dx.doi.org/10.1016/j.oceano.2015.07.001

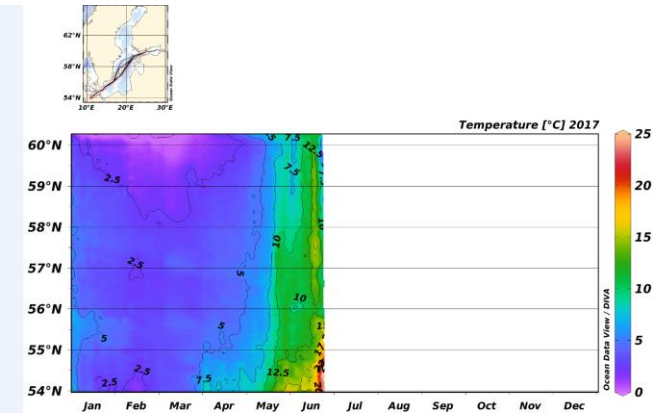
Groetsch, P. M. M., Simis, S. G. H., Eleveld, M. A., and Peters, S. W. M.: Spring blooms in the Baltic Sea have weakened but lengthened from 2000 to 2014, Biogeosciences, 13, 4959-4973, doi:10.5194/bg-13-4959-2016, 2016.

Simis SGH, Ylöstalo P, Kallio KY, Spilling K, Kutser T (2017) Contrasting seasonality in optical-biogeochemical properties of the Baltic Sea. PLoS ONE 12(4): e0173357. https://doi.org/10.1371/journal.pone.0173357	
Andres Jaanus, Ivan Kuprijanov, Kaire Kaljurand, Sirpa Lehtinen, Annely Enke, Optimization of phytoplankton monitoring in the Baltic Sea, Journal of Marine Systems, Volume 171, July 2017, Pages 65-72, https://doi.org/10.1016/j.jmarsys.2016.10.009.	
V. Mohrholz, M. Naumann, G. Nausch, S. Krüger, U. Gräwe, Fresh oxygen for the Baltic Sea — An exceptional saline inflow after a decade of stagnation, Journal of Marine Systems, Volume 148, 2015, Pages 152-166, ISSN 0924-7963, http://dx.doi.org/10.1016/j.jmarsys.2015.03.005.	
Emilie Houliez, Stefan Simis, Susanna Nenonen, Pasi Ylöstalo, Jukka Seppälä, Basin-scale spatio-temporal variability and control of phytoplankton photosynthesis in the Baltic Sea: The first multiwavelength fast repetition rate fluorescence study operated on a ship-of-opportunity, Journal of Marine Systems, Volume 169, May 2017, Pages 40-51, ISSN 0924-7963, https://doi.org/10.1016/j.jmarsys.2017.01.007.	
comments	data has not doi
What did you like to improve in the next 18 months	Need to get a better system to collect all publications that use Algaline data
4.1.3. Conferences or meeting	
Not listed	

What did you like to improve in the next 18 months	Need to get a better system to collect a list of all dissemination activities.
4.1.4. PhD Thesis	
4.2. Policy	
4.2.1. National and European framework	
Data used for WFD: Uusimaa Centre for Economic Development, Transport and the Environment: http://www.doria.fi/handle/10024/121868 http://www.ymparisto.fi/download/noname/%7B77DAB50C-0FEC-4F36-AB8A-3CA0D9197509%7D/94760 Data used for assessment of the state of the marine areas in Helsinki, City of Helsinki https://www.hel.fi/static/ymk/julkaisut/julkaisu-04-12.pdf https://www.hel.fi/static/ymk/julkaisut/julkaisu-08-13.pdf https://www.hel.fi/static/ymk/julkaisut/julkaisu-02-16.pdf https://www.hel.fi/static/ymk/julkaisut/julkaisu-06-14.pdf Data used in MSDF by Finnish authorities http://www.ymparisto.fi/download/noname/%7BECF9A983-AC50-4DAB-B237-D7EA3A09664B%7D/103978 Data used by HELCOM in assessing the state of the Baltic Sea http://www.helcom.fi/action-areas/monitoring-and-assessment/monitoring-manual/phytoplankton/pigments http://www.helcom.fi/action-areas/monitoring-and-assessment/monitoring-manual/hydrography/temperature-salinity-transparency-turbidity#Concepts http://www.helcom.fi/action-areas/monitoring-and-assessment/monitoring-manual/hydrochemistry/nutrients#Concepts Data used for national information of the algal blooms, weekly public announcements, marine observations rely largely on Algaline records,	

http://www.syke.fi/en-US/Current/Algal_reviews/Algal_reviews%2811212%29 http://www.syke.fi/hankkeet/levatiedotus (in Finnish only)	
4.2.2. Meetings	
information not collected	
comments	Not all use documented
What did you like to improve in the next 18 months	Need to get a better system to collect a list of all dissemination activities.
4.3. small, medium and large companies and consultancy	
Number of contacts	
Type of industry	
What kind of services did they create or improve with the data	

comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	
Type of societal activity	
What kind of services did they create or improve with the data	
comments	

What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	4
Total man months used in the last 18 months	1.76
% man month used	44 %
Description of the activities	1. In 2016 we have been creating NRT plotting system for data, using automated ODV-plotting scripts. The script has also possibilities for QA/QC. The system is still in the internal use only.  2. We have improved the automated data transfer from ferry Silja Serenade, allowing the RT data visualisation 3. We have been working towards getting the data to CMEMS and ferrybox database at ferrybox.org

6. summary of future actions during the next 18 months	
1. getting the automated ODV plots online 2. getting Silja Serenade data available in RT 3. Establishing and improving the flow of data (e.g. to CMEMS and ferrybox.org) 4. Improving data flow to end users (e.g. city of Helsinki) 5. Marketing our data for new customers	

Assessment of Virtual access provider (WP6)

name of the organisation	**SMHI**
2. Description of the portal	
Address	sharkweb.smhi.se (Swedish) and sharkdata.se (English machine interface to sharkweb)
Creation date	2007 / 2015
Language	Swedish
Description	**Swedish national marine environmental monitoring data Several datatypes available comprising biology, chemistry and physical data.**

	The spatial coverage are generally Swedish national waters, including the HELCOM and OSPAR monitoring areas. The temporal coverage is 1893 to today, with an increasing data volyme towards present date. **Swedish mooring and ferrybox data are also avalible online though both API and human interface. For more information please visit https://www.smhi.se/en/services/open-data/oceanographic-observations-1.33356 or SMHI.se The mooring data are/will also be avalible through the Copernicus and data portal. More details in this report will only focus on SHARKweb with respect to webstatistcs etc.**
Access to the data	Direct link: sharkweb.smhi.se is a human interface, in Swedish, for quick overview of data and download in several different formats. There is also an machine interface to the same data: sharkdata.se, the latter is connected to the EMODNET data portal and more. These data sets are directly related to JERICOnext: https://data.smhi.se/oce/SHARK/data_deliveries/SHARK_PhysicalChemical_2013_JCO_IAMK_version_2017-04-26.zip https://data.smhi.se/oce/SHARK/data_deliveries/SHARK_PhysicalChemical_2012_JCO_IAMK_version_2017-04-26.zip https://data.smhi.se/oce/SHARK/data_deliveries/SHARK_Phytoplankton_2015_SMHI_TRANSPAPER_version_2017-04-26.zip
Link to another webportal	Sharkdata.se – REST API to same data
2. Statistics concerning the flow of information	
Statistical tool	Bash shell and R (the code may be provided upon request)
Period	2016-2017-05-30

Acquisitions		
Pageviews	45828	
Unique pageviews	1715	
Avg. Time on Page	- No information at thjis time	
Bounce Rate	No information at thjis time	
Downloads	No information at thjis time	
Origin of visitor	"Seattle" 29994 "Gothenburg" 10000 "Beijing" 9123 "Stockholm" 5834 "Mountain View" 3743 "Redmond" 1875 "Kaliningrad" 1532 "Skövde" 1109 "Uppsala" 1010 "Lund" 797 "Solna" 650 "Lysekil" 645 "Drottningholm" 614 "Chicago" 607	

10 Top countries	Sweden, USA, China, Germany, Russia, Denmark, Finland, Netherlands, Belgium, Ukraine	
Comments	Based on cities, some of it may be robot traffic but it should be filtered out. Many of the Gothenburg (Sweden) visits are probably related to the location of the lab. (our self)	
What did you like to improve in the next 18 months	**Related to data:** **Webstatistics analytics to be more specific and detailed for JERICOnext** **We would like to add more data if possible and to make more of it available to EMODNET than today.**	
3. Description of users		
	Scientits, public body organisations, students	
4.Dissemination and Use		
4.1. Science		
4.1.1. data use		
DOI (data) https://doi.org/1	Description We do not currently have doi	**DOI (publication)**
comments	We are going to implement DOI in a near future	

What did you like to improve in the next 18 months	The open source software for data QC-control, the FerryBox Toolbox used on SMHI, has been used to make manual quality control of the 2016 FerryBox data (from the ship Transpaper). During the work some needed features and required changes have been identified e.g. it will also to be configured to be able to deliver an output format of automatic quality controlled data in near real time via CMEMS. There is also an ongoing work on making the FerryBox Toolbox freely available. We will probably also improve the data feed in an coordinated effort with HZG. There are great opportunities to enhance data exchange for EuroGOOS and its ROOSs with portals such as the portals of the ROOSs and EMODnet

4.1.2. Publications

No information

comments	There may be publications in draft stage
What did you like to improve in the next 18 months	Publish publications related to the Swedish imaging flow cytobot study at Tangesund and the upcoming field work this summer.

4.1.3. Conferences or meeting

No information

What did you like to improve in the next 18 months	

4.1.4. PhD Thesis
No information
4.2. Policy
4.2.1. National and European framework
No information
4.2.2. Meetings
Specifications for a European FerryBox data management system (M24) has been presented at the **WP5** meeting in London March 17 2016. Effects of temperature on blooms of cyanobacteria in the Baltic Sea was presented ath the Heraklion meeting in April 2016.

comments	These meeting may not be directly related to WP6 but may affect the virtual access with more data and software for data- flow, -handeling and quality control.
What did you like to improve in the next 18 months	

4.3. small, medium and large companies and consultancy

Number of contacts	No information
Type of industry	
What kind of services did they create or improve with the data	
comments	
What did you like to improve in the next 18 months	
4.4. Society	
Number of contacts	
Type of societal activity	
What kind of services did they create or improve with the data	

comments	
What did you like to improve in the next 18 months	
5. what has been done the last 18 months	
Total man months	18
Total man months used in the last 18 months	0.18
% man month used	10%
Description of the activities	Data has been added to the sharkweb portal. Specifications for a European Ferrybox data management system (D 5.3) has been defined and presented.
6. summary of future actions during the next 18 months	
Webstatistics analytics to be more specific and detailed for JERICO-NEXT We would like to add more data if possible and to make more of it available to EMODNET than today. make more data available to EMODNET	