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EVIOR portal with selected functionality

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Approvals			
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V1.1	4 November 2019	Reviewed	Niamh Flavin
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1 Introduction

Eurofleets+ facilitates open free of charge access to a unique fleet of state-of-the-art research vessels, AUVs and ROVs from European and international partners. This is arranged by competitive transnational access (TA) calls. A Data Policy has been adopted which aims at making Eurofleets+ research data to be findable, accessible, interoperable and reusable (FAIR). Therefore, marine data management is an integral part of the Eurofleets+ approach and is implemented in synergy with SeaDataNet, a leading pan-European infrastructure for marine data management, involving NODCs as core partners. More details about the planned data management approach can be found in Deliverables D1.3 - Eurofleets+ Data Management Plan and D9.5 - Eurofleets + data sets catalogue.

One of the elements of the Eurofleets+ data management approach is to review, update and further develop the EVIOR platform which has been initiated in the earlier Eurofleets projects. EVIOR stands for 'European Virtual Infrastructure in Ocean Research' and should be part of the EF+ website.

This activity is undertaken within WP3 – JRA3.1 as Task 3.1.1 - Reviewing and upgrading the design and functionality of the EVIOR portal. One objective is to gather and publish at the EVIOR platform up-to-date information about research vessels (RV), cruise programmes, completed cruises, and tracks of cruises. The ultimate goal during the EF+ project is to give users e-access to underway and operational information and data from sailing research vessels by means of the EVIOR platform. Moreover, it is planned to give discovery and public access to research data sets as collected and processed by research teams during the TA funded cruises.

This Deliverable D3.1 reports the activities of T3.1.1 undertaken so far for reviewing and upgrading the EVIOR platform, for adopting the new Eurofleets+ styling and for integrating the upgraded EVIOR platform in the new Eurofleets+ website. Moreover, this deliverable describes the activities that are underway for gathering updated contents for the EVIOR information modules, and planned for enriching the offer of the EVIOR platform.

2 EVIOR components

The initial EVIOR platform has been developed in earlier Eurofleets projects. As part of the Eurofleets+ project it has been decided to continue and upgrade the following existing components:

- Research Vessel Cruise Programme database, containing planned cruises per research vessel and owner / operator;
- Research Vessel database, containing characteristics of each research vessel, owner / operator details and, if available, a link to the ship's web page;
- Cruise Summary Reports (CSR) database, containing details of completed cruises and providing a first level inventory of oceanographic measurements made and samples taken during the cruises;
- Dynamic Vessel Tracking & Events System, giving dynamic charts of sailing tracks of selected RVs with position, speed, and bearing as well as 24-hour Ship Summary Reports (SSR).

In the new situation, it is planned to maintain the same functionality for the first 3 components, while focusing on maintaining up-to-date contents. While for the 4th component, it is planned to expand the functionality to include Near Real-Time info from vessels while sailing and to collect input from most vessels in the Eurofleets+ fleet. The latter is part of the Eurofleets+ data management approach to

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deploy the EARS system at as many Eurofleets research vessels as possible in order to receive underway data on sailing tracks and from fixed instruments aboard the vessels.

In a later stage, the EVIOR platform will be expanded with an extra component:

- Eurofleets+ Data Sets Catalogue, to provide an up-to-date overview of Eurofleets+ TA funded cruises and dynamic links to relevant information for each of the cruises, such as cruise plan, sailing tracks, and en-route information. A few months after completion of a cruise, it should also provide public discovery and access to the research data acquired during the TA funded cruises and processed by the cruise research teams, and thereafter submitted to EMODnet Data Ingestion for further validation and uptake by NODCs in the SeaDataNet infrastructure. See D9.5 - Eurofleets + data sets catalogue – for more details.

The Eurofleets+ beneficiaries manage a selection of European research vessels and equipment. However, it has been decided not to limit the scope of the EVIOR databases, but to focus on a full European coverage, encouraging also non-Eurofleets+ RV operators and researchers to contribute. This is stimulated via various existing networking relations, such as SeaDataNet, EurOcean, POGO, JCOMMOPS, ERVO (European Research Vessel Operators) and IRSO (International Research Vessel Operators Meeting).

3 Upgrading the EVIOR platform and integration

Task 3.1.1 - Reviewing and upgrading the design and functionality of the EVIOR portal – is undertaken in a number of steps:

Step 1: Review the existing EVIOR portal and design new concept and specifications for functionality and interfaces (M1 - M4).

Step 2: Implement the initially enhanced EVIOR portal for selected functionality and modules (M3 - M8).
Step 3: Expand the functionality of the EVIOR portal following the results of T3.1.2 (M20 - M28), whereby T3.1.2 comprises: Reviewing and upgrading the suite of shipboard software components;
Step 4: Further extend functionality of the EVIOR portal following the results of T3.1.3, T3.1.4 and T3.1.5 (M30 - M42), whereby T3.1.3, T3.1.4 and T3.1.5 comprise: Outfitting the Eurofleets+ fleet; Developing a 'virtual playground" as part of the EVIOR portal; and Optimizing solutions for telepresence and real-time data transfer (e-access).

This Deliverable D3.1 describes the activities and results as undertaken in steps 1 and 2, while the further upgrading and population of the EVIOR platform as planned in steps 3 and 4 will be documented in Deliverable D3.27 in M42, when also the related tasks T3.1.2 – T3.1.6 have been fully deployed and implemented.

As part of steps 1 and 2, the number of initial components of the EVIOR platform has been reduced from 5 to the 4 as mentioned in Chapter 2, while a new 5th component is planned later to be added, once the Eurofleets+ TA cruises have been deployed and there is content from implementing the data management strategy.

First of all, a new landing page has been drafted in a cooperation of MARIS with Blue Lobster, who are responsible for the overall Eurofleets+ website and promotion styling. The new EVIOR homepage is shown below:

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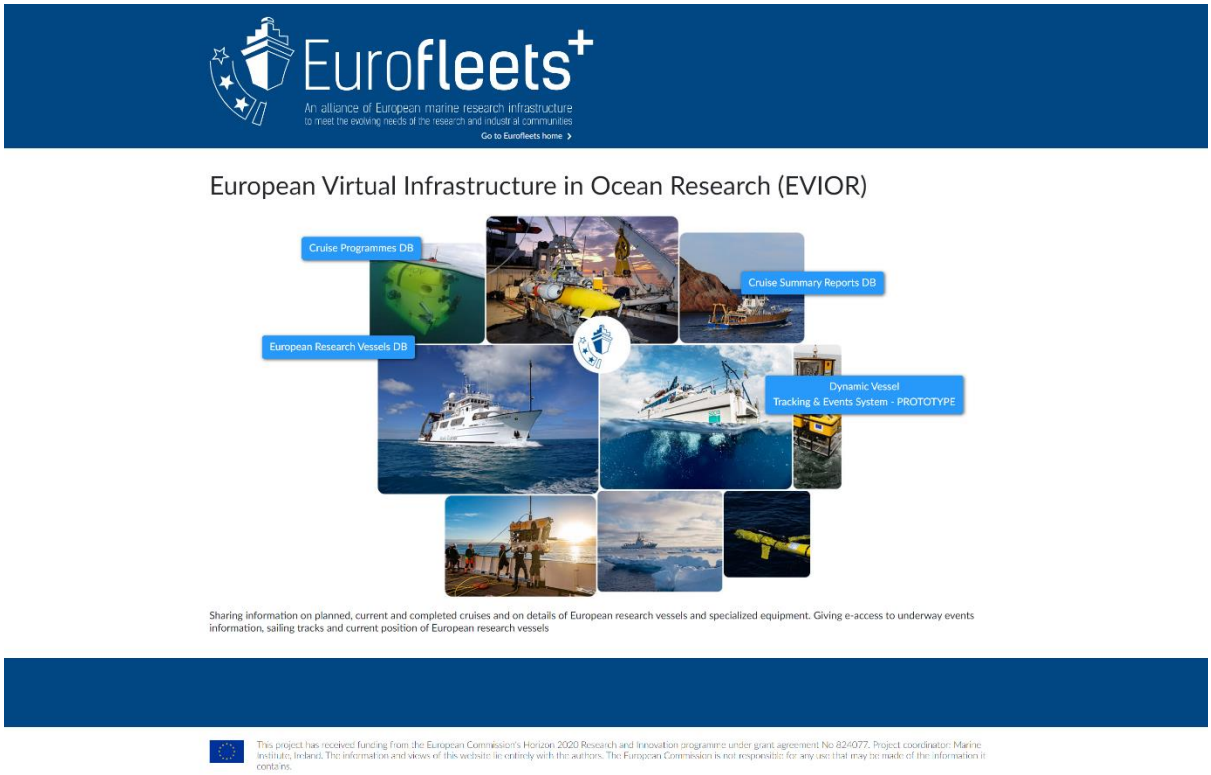

Image: landing page of EVIOR platform, giving access to each of the components

Furthermore, a new styling has been drafted and implemented for the following 3 EVIOR components, again in a cooperation between MARIS and Blue Lobster:

- Research Vessel Cruise Programme database
- Cruise Summary Reports (CSR) database
- Dynamic Vessel Tracking & Events System

The following screens give examples of the new pages for each of these 3 components.

Image: Research Vessel Cruise Programme database – new layout and styling example: search page

Image: Research Vessel Cruise Programme database – new layout and styling example: results page

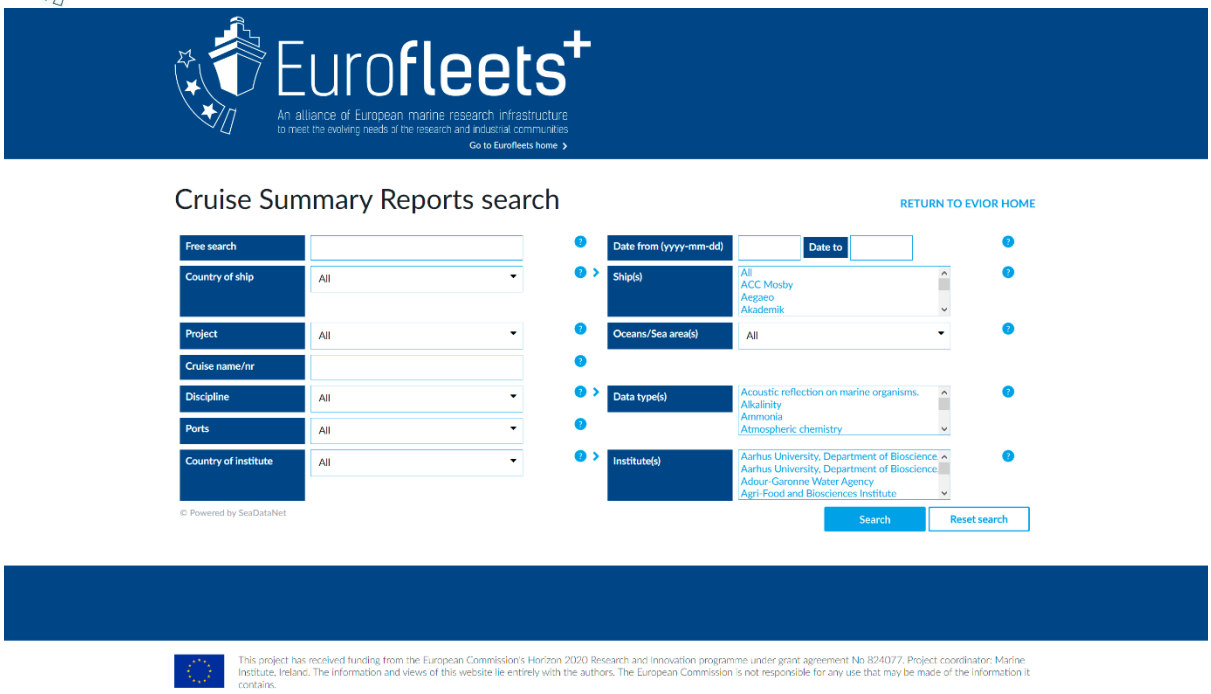

Image: Cruise Summary Reports (CSR) database – new layout and styling example: search page

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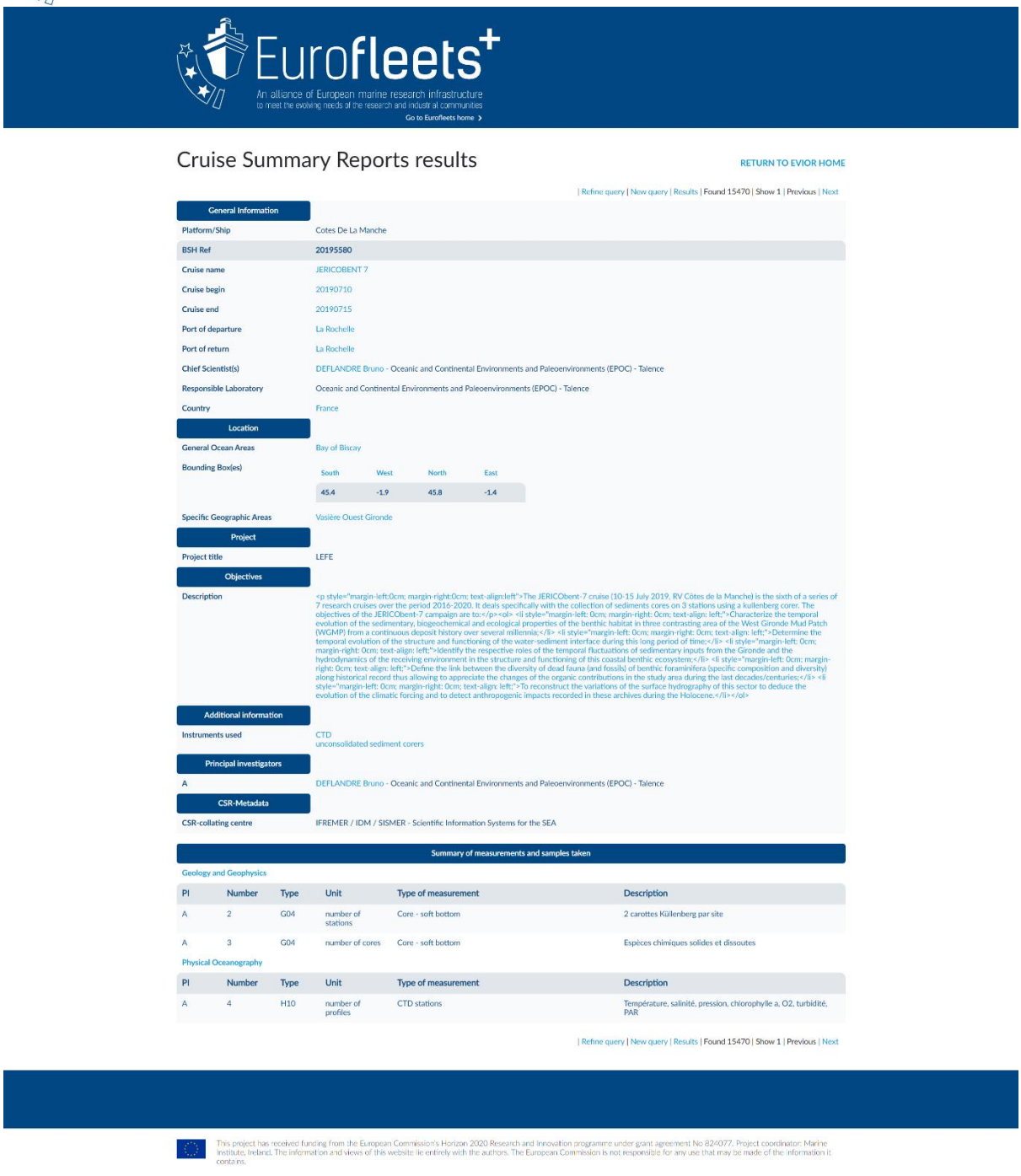

Eurofleets+
An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities
Go to Eurofleets home

Cruise Summary Reports results

RETURN TO EVIOR HOME

| Refine query | New query | Results | Found 15470 | Show 1 | Previous | Next

General Information

Platform/Ship	Cotes De La Manche
BSH Ref	20195580
Cruise name	JERICOBENT 7
Cruise begin	20190710
Cruise end	20190715
Port of departure	La Rochelle
Port of return	La Rochelle
Chief Scientist(s)	DEFLANDRE Bruno - Oceanic and Continental Environments and Paleoenvironments (EPOC) - Talence
Responsible Laboratory	Oceanic and Continental Environments and Paleoenvironments (EPOC) - Talence
Country	France

Location

General Ocean Areas	Bay of Biscay
Bounding Box(es)	South 45.4 / West -1.9 / North 45.8 / East -1.4
Specific Geographic Areas	Vasière Ouest Gironde

Project

Project title	LEFE

Objectives

Description	The JERICOBent-7 cruise (10-15 July 2019, RV Côtes de la Manche) is the sixth of a series of 7 research cruises over the period 2016-2020. It deals specifically with the collection of sediments cores on 3 stations using a kullenberg corer. The objectives of the JERICOBent-7 campaign are to: - Characterize the temporal evolution of the sedimentary, biogeochemical and ecological properties of the benthic habitat in three contrasting area of the West Gironde Mud Patch (WGMP) from a continuous deposit history over several millennia; - Determine the temporal evolution of the structure and functioning of the water-sediment interface during this long period of time; - Identify the respective roles of the temporal fluctuations of sedimentary inputs from the Gironde and the hydrodynamics of the receiving environment in the structure and functioning of this coastal benthic ecosystem; - Define the link between the diversity of dead fauna (and fossils) of benthic foraminifera (specific composition and diversity) along historical record thus allowing to appreciate the changes of the organic contributions in the study area during the last decades/centuries; - To reconstruct the variations of the surface hydrography of this sector to deduce the evolution of the climatic forcing and to detect anthropogenic impacts recorded in these archives during the Holocene.

Additional information

Instruments used	CTD unconsolidated sediment corers

Principal investigators

A	DEFLANDRE Bruno - Oceanic and Continental Environments and Paleoenvironments (EPOC) - Talence

CSR-Metadata

CSR-collating centre	IFREMER / IDM / SISMER - Scientific Information Systems for the SEA

Summary of measurements and samples taken

Geology and Geophysics

PI	Number	Type	Unit	Type of measurement	Description
A	2	G04	number of stations	Core - soft bottom	2 carottes Küllenberg par site
A	3	G04	number of cores	Core - soft bottom	Espèces chimiques solides et dissoutes

Physical Oceanography

PI	Number	Type	Unit	Type of measurement	Description
A	4	H10	number of profiles	CTD stations	Température, salinité, pression, chlorophylle a, O2, turbidité, PAR

| Refine query | New query | Results | Found 15470 | Show 1 | Previous | Next

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Image: Cruise Summary Reports (CSR) database – new layout and styling example: detail page

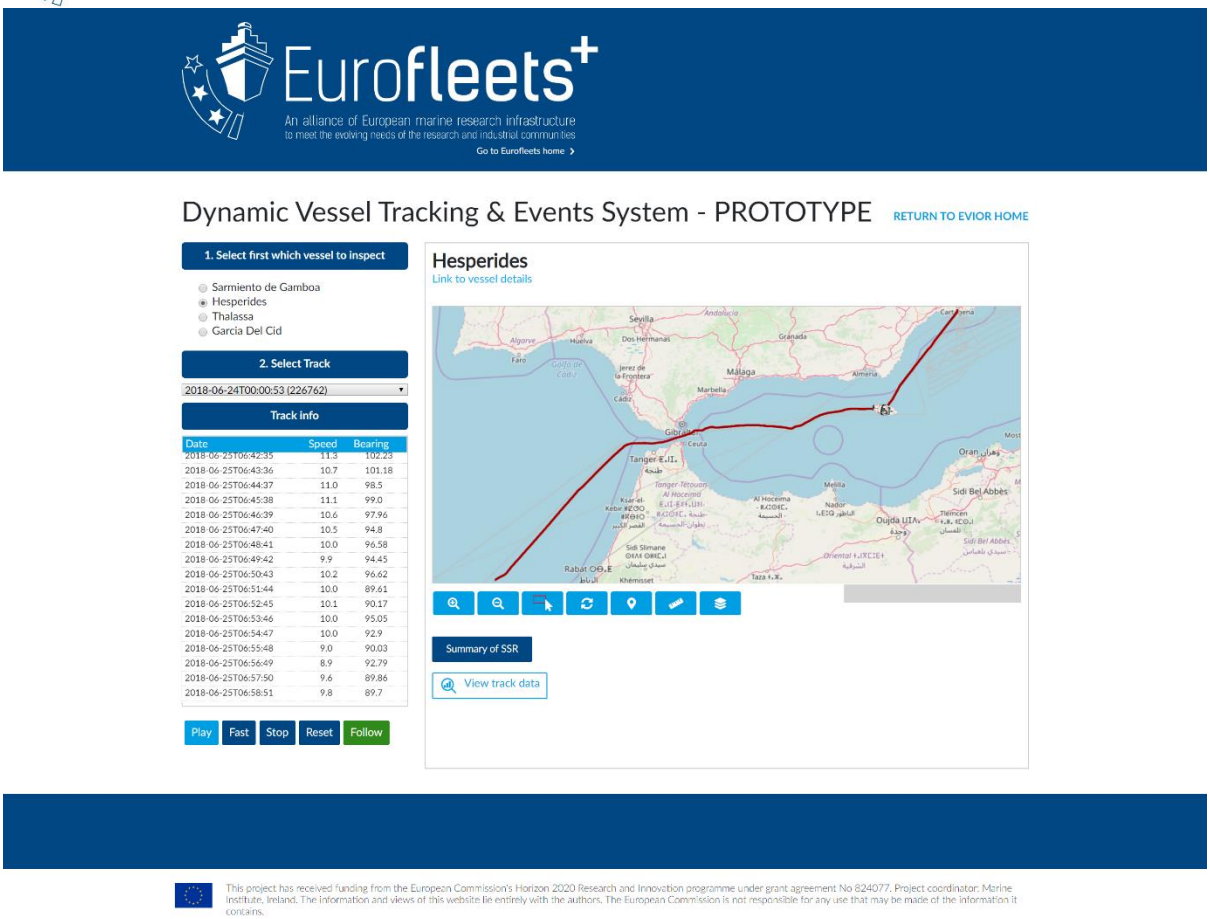

Image: Dynamic Vessel Tracking & Events System – new layout and styling example

The 4th component concerns the Research Vessel database. This database is operated and managed by EurOcean. However, EurOcean is underway with a major upgrade of its infobases, aiming to integrate all its infobases in one harmonised user interface. Therefore, Eurocean has not yet adapted the existing Eurofleets Research Vessel database, but maintained it as it was for now.

Image: Research Vessel database – existing layout and styling example: search page

Image: Research Vessel database – existing layout and styling example: detail page

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In addition, activities have been undertaken to integrate the new EVIOR platform in the new Eurofleets+ website. This has been undertaken by MARIS in cooperation with EurOcean and Blue Lobster. First of all, a subdomain has been registered for the EVIOR platform landing page as: https://evior.eurofleets.eu which is hosted by MARIS.

Thereafter, this has been integrated in the main Eurofleets+ website and its menu structure. It was decided to go by 'infrastructure' and then to select by type for a new option 'Digital and Data' which then leads to the intro page of EVIOR.

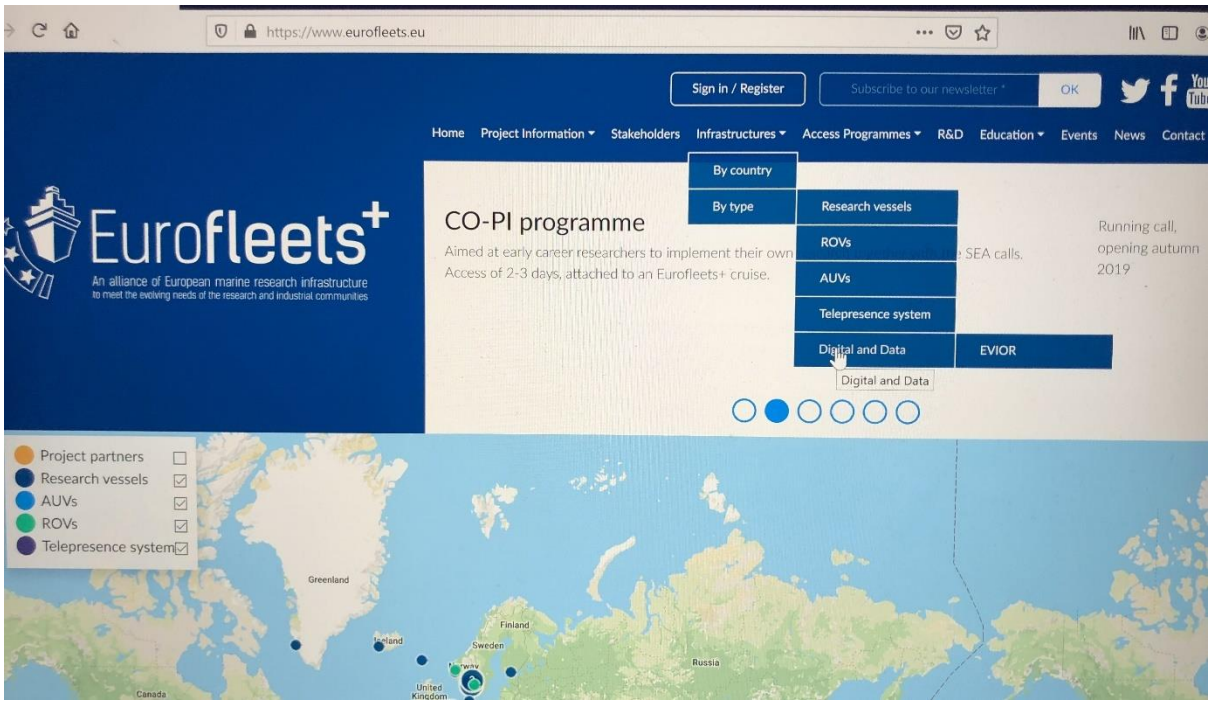

Image: Menu structure of https://www.eurofleets.eu with menu option for EVIOR platform

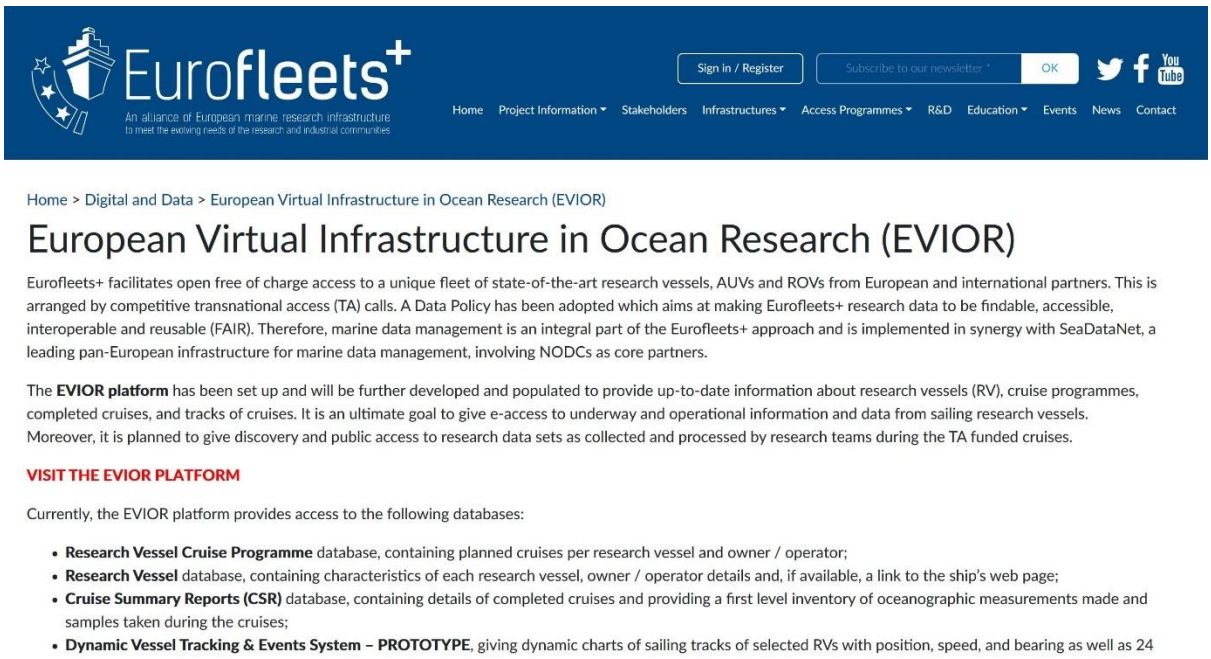

Image: Intro page at https://www.eurofleets.eu to go to EVIOR platform

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4 Gathering updated content for the EVIOR modules and further developments

The plans for gathering of content for each of the EVIOR modules and possible further developments are summarised as follows.

Cruise Summary Reports db system

The long-time existing SeaDataNet Cruise Summary Reports database is being updated on a continuous basis by the NODCs (National Oceanographic Data Centres) in the SeaDataNet network. These CSR flow concerns most European research vessels. In addition, it will be populated with CSRs of each Eurofleets+ TA cruise as part of the Eurofleets+ data management protocol. For preparing and submitting CSRs use is to be made of the SeaDataNet standard format, tools and procedure. The CSR database itself is managed by BSH; later in time this will migrate to IFREMER. The completed CSRs of all cruises, including the Eurofleets+ TA cruises, will be published through the CSR user interfaces at the EVIOR portal, SeaDataNet portal, and POGO (Partnership for Observation of the Global Oceans) CID (Cruise Information Database) portal.

Cruise Programme db system

The existing Eurofleets Cruise Programme database will be populated with Cruise Plans for as many research vessels as possible from European operators (all RVs) and international operators (all ocean-going RVs). This will include Cruise Plans for each Eurofleets+ TA cruise. For preparing and submitting CPs use is to be made of the Eurofleets standard format, tools and procedure. The CP database itself is managed by MARIS. The completed CPs will be published through existing CP user interfaces at the EVIOR portal, and POGO CID portal. As part of T3.1.1. preparations have been made for giving momentum again to the gathering of the Cruise Programme info from all European RV operators and from international operators of ocean-going RVs (larger than 60 meters).

Previously, the gathering and publishing of the information for the Cruise Programme database was done by BODC (UK) in cooperation with MARIS (NL). In the new Eurofleets+ project it is coordinated by MARIS for the European research vessels, while JCOMMOPS will gather cruise programme information for international ocean-going research vessels.

For this purpose, MARIS with the help of Eurofleets+ colleagues and European Research Vessels Organisation (ERVO), has compiled a list of current European research vessels with their operators and individual contacts to approach. This list is given below; however, without the individual names and email addresses for GDPR reasons.

Country	Operator (EDMO)	Operator (EDMO)	Ship	ICS-Shipcode	EF+ partner
Belgium	RBINS	3325	**Belgica**	**11BE**	YES
Belgium	VLIZ	422	**Simon Stevin**	**11SS**	YES
Bulgaria	IO-BAS	1843	**Akademik**	**15AK**	NO
Croatia	IOF	700	**BIOS DVA**	**HRBS**	NO

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Country	Operator (EDMO)	Operator (EDMO)	Ship	ICS-Shipcode	EF+ partner
			Navicula	**HRNA**	
Croatia	IRB	702	**Vila Velebita**	**HRVV**	NO
Denmark	DTU-AQUA	2195	**RV Dana**	**26D4**	YES
			Havfisken II	**26HF**	
Denmark	AU-BIOS	5123	**Aurora**	**26UO**	NO
Estonia	TUT	3400	**Salme**	**ESSA**	NO
Faroe Islands	FAMRI	3084	**Magnus Heinason**	**26MH**	YES
Finland	SYKE	1104	**Aranda**	**34A3**	YES
France	Ifremer	848	**Alis**	**35AY**	YES
			Antéa	**35A8**	
			Beautemps-Beaupré	**35B5**	
			Cotes de la Manche	**35C4**	
			L'Atalante	**35A3**	
			L'Europe	**35EU**	
			Marion Dufresne	**35MV**	
			Pourquoi pas?	**35PK**	
			Thalassa	**35HT**	
			Thalia	**35TC**	
			Thetys II	**35TT**	
Germany	AWI	1368	**FS Polarstern**	**06AQ**	YES – AWI overall
	Briese Schiffahrt	1569	**Heincke**	**06HK**	
	DFG	1365	**Maria S Merian**	**06M2**	
	DFG	1365	**Meteor**	**06M3**	
	PtJ, RC Juelich	1366	**Sonne**	**06SN**	
	GEOMAR	2947	**Poseidon**	**06PO**	
	Thunen Institute	1570	**Walther Herwig III**	**06NI**	
Germany extra	GEOMAR	2947	**Alkor**	**06A6**	YES – GEOMAR with Alkor; AWI overall; MARUM with AOV
	IOW	100	**Elisabeth Mann Borgese**	**06EZ**	
	GEOMAR	2947	**Littorina**	**06LT**	
	HZG	2842	**Ludwig Prandtl**	**06LO**	
	Senckenberg am Meer	1324	**Senckenberg**	**06MP**	
Greece	HCMR	164	**Aegaeo**	**36AE**	YES
			Philia	**36PH**	
Greenland	GINR	2807	**Sanna**	**GLSW**	YES
Iceland	MFRI	4766	**Arni Fridriksson**	**46AS**	YES
			Bjarni Saemundsson	**46BS**	
Ireland	MI	396	**Celtic Explorer**	**45CE**	YES
			Celtic Voyager	**45CV**	

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Country	Operator (EDMO)	Operator (EDMO)	Ship	ICS-Shipcode	EF+ partner
Italy	CNR (SO.PRO.MAR SpA)	2802	**Dallaporta**	**48DP**	YES
Italy	OGS	120	**OGS Explora**	**48AZ**	YES
			Ernest Shackleton	**74EE**	
Italy	NATO CMRE	4514	**CRV Leonardo**	**48LE**	YES
			NRV Alliance	**06A4**	
Lithuania	APC-KU	5014	**Mintis**	**??**	NO
Netherlands	NIOZ	630	**Pelagia**	**64PE**	YES
Norway	IMR	1351	**Dr. Fridtjof Nansen**	**58KC**	YES
			G.O.Sars	**58G2**	
			Kristine Bonnevie	**58UO**	
			Kronprins Haakon	**58US**	
			G.M. Dannevig	**58D2**	
			Hans Brattström	**58HB**	
			Johan Hjort	**58J3**	
Norway	NTNU	1419	**Gunnerus**	**58GU**	NO
Norway	UiT	1636	**Helmer Hanssen**	**58HJ**	NO
Norway	NGU	1415	**Seisma**	**??**	NO
Norway	UIO	778	**Trygve Braarud**	**58TB**	NO
Poland	IOPAS	195	**Oceania**	**67CE**	NO
Poland	NMFRI	194	**Baltica**	**67BC**	NO
Poland	IO UG	576	**Oceanograf**	**??**	NO
Portugal	DOP/UAC	606	**Arquipelago**	**68AR**	NO
Portugal	IPMA	3288	**Mar Portugal**	**??**	YES
			Noruega	**68NA**	
Portugal	IHPT-ANH	1362	**NRP Almirante Gago Coutinho**	**68GC**	NO
			NRP Andromeda	**68AN**	
			NRP Auriga	**68AU**	
			NRP D. Carlos I	**68DM**	
Romania	GeoEcoMar	850	**Mare Nigrum**	**73AA**	YES
			Istros	**73IS**	
Spain	IEO	353	**Ángeles Alvariño**	**29AJ**	YES
			Francisco de Paula Navarro	**29FN**	
			Ramon Margalef	**29RM**	
Spain	CSIC	2489	**Garcia del Cid**	**29GD**	YES
			Hesperides	**29HE**	
			Sarmiento de Gamboa	**29AH**	
Spain	SOCIB	3410	**SOCIB**	**29SO**	YES
Sweden	SPRS	1466	**Oden**	**77DN**	NO
Sweden	SU-BSC	5124	**Electra**	**77WX**	NO

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Country	Operator (EDMO)	Operator (EDMO)	Ship	ICS-Shipcode	EF+ partner
Sweden	UMU	622	**Botnica**	**77LY**	NO
Sweden	UGOT	4756	**New Skagerak**	**??**	YES
Turkey	TÜBITAK	217	**TÜBİTAK Marmara**	**??**	YES
Turkey	IMS – METU	696	**Bilim-2**	**89B2**	NO
UK	NOC	17	**RSS Discovery**	**74EQ**	NO
			RRS James Cook	**740H**	
UK	Cefas (P&O Maritime Services)	28; 5125	**Cefas Endeavour**	**74E9**	NO
UK	BAS	41	**RSS Sir David Attenborough**	**??**	NO
UK	P&O Maritime Ocean Sciences	5125	**Prince Madog**	**74P2**	NO
UK	SEPA	5126	**Sir John Murray**	**74IQ**	NO
UK	Marine Scotland	2660	**Scotia**	**748S**	NO
			Alba Na Mara	**74CU**	
UK	AFBI	1385	**Corystes**	**74RY**	NO
Bermuda	Bermuda Institute of Ocean Sciences	1383	**Atlantic Explorer**	**33H4**	YES
Canada	Reformar	5127	**Coriolis II**	**18OL**	YES
New-Zealand	NIWA Vessel Management Ltd	1993	**Tangaroa**	**61TG**	YES

Table: Overview of European research vessels and their operator contacts that will be approached for gathering Cruise Programme information

The table also includes a few research vessels which do not yet have a ICES-shipcode and are not yet included in the SeaDataNet C17 vocabulary for platforms, which is used as a controlled term in the EVIOR databases. These missing codes are indicated in blue in the table. In cooperation with BODC new codes have been requested from ICES and NOAA who are managing the ICES-shipcodes internationally. Once these have been received, all the identified contacts will be approached in an individual email, naming the identified research vessels and their codes, and explaining the importance and added value of having an up-to-date cruise programme database, both for Europe and for POGO. The email will also explain what information is requested and how it can be delivered.

The most used way will be that operators complete a spreadsheet template and return this for uptake into the central Cruise Programme database which is managed at MARIS. Next to the spreadsheet approach, there are two alternative ways of preparing and delivering the information. As a second option operators can enter the information manually, directly through an on-line Content Management System. A third option is to make use of the SeaDataNet Mikado software which allows input of cruise programme information (PCR), either manually or by mapping to a database that operators might manage themselves, resulting in XML files for submission. Operators will be asked to choose their preferred option.

The gathered information will be published at the Eurofleets+ EVIOR portal concerning European RVs, and at the International Cruise Information Database website of the Partnership for Observation of the Global Ocean (POGO), concerning all RVs longer than 60 meters.

JCOMMOPS will undertake efforts to identify and approach international RV operators. For that purpose, JCOMMOPS has joined the recent meeting of the International Research Ship Operators

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(IRSO) and given a short presentation about the Eurofleets+ Cruise Programme initiative. They also indicated that the information will also be published at the POGO website: http://www.pogo-oceancruises.org.

To make it more attractive, MARIS has recently upgraded the look & feel of the POGO CID website. The following screens give some impressions.

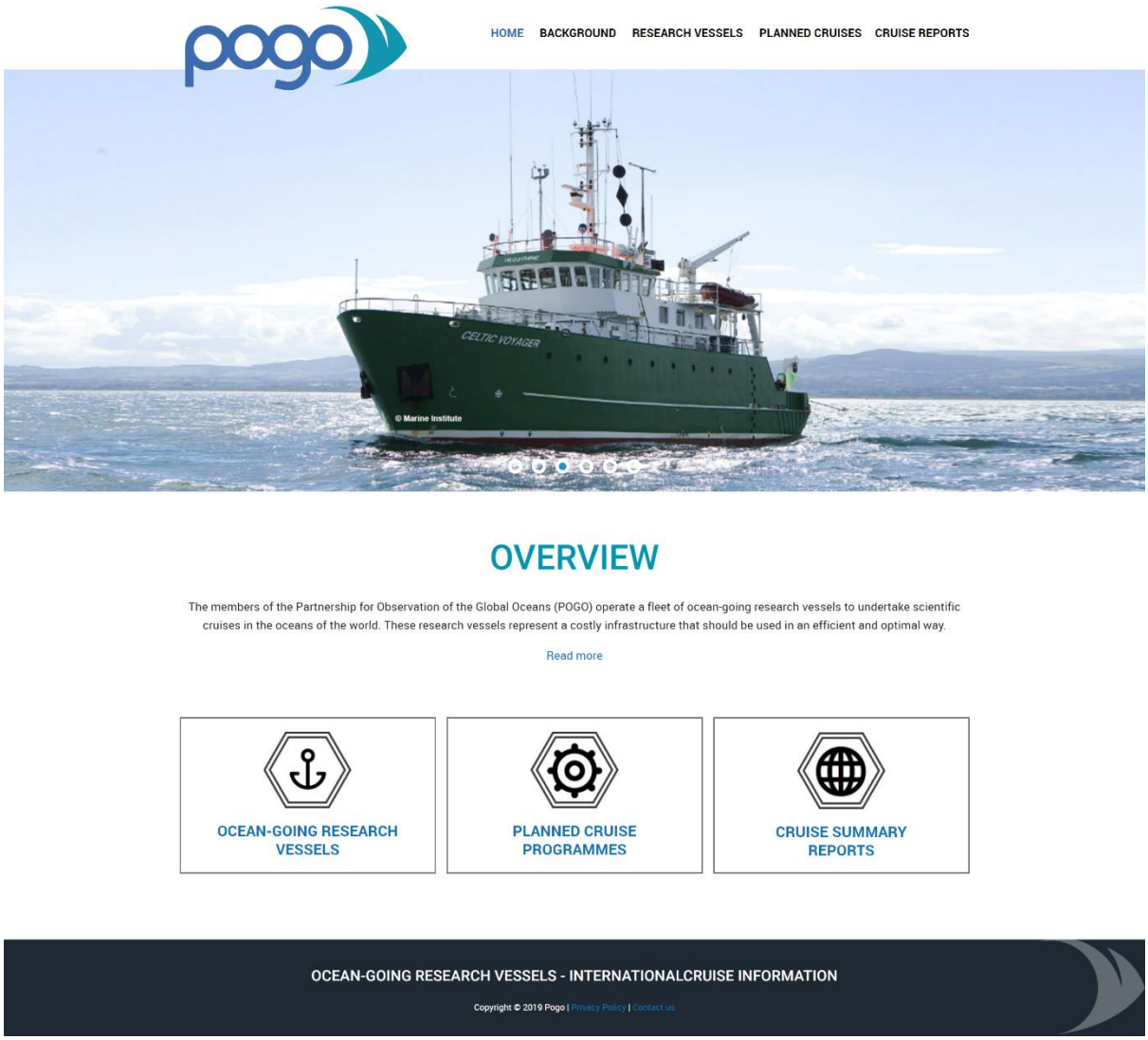

Image: Upgraded POGO CID website at http://www.pogo-oceancruises.org - homepage

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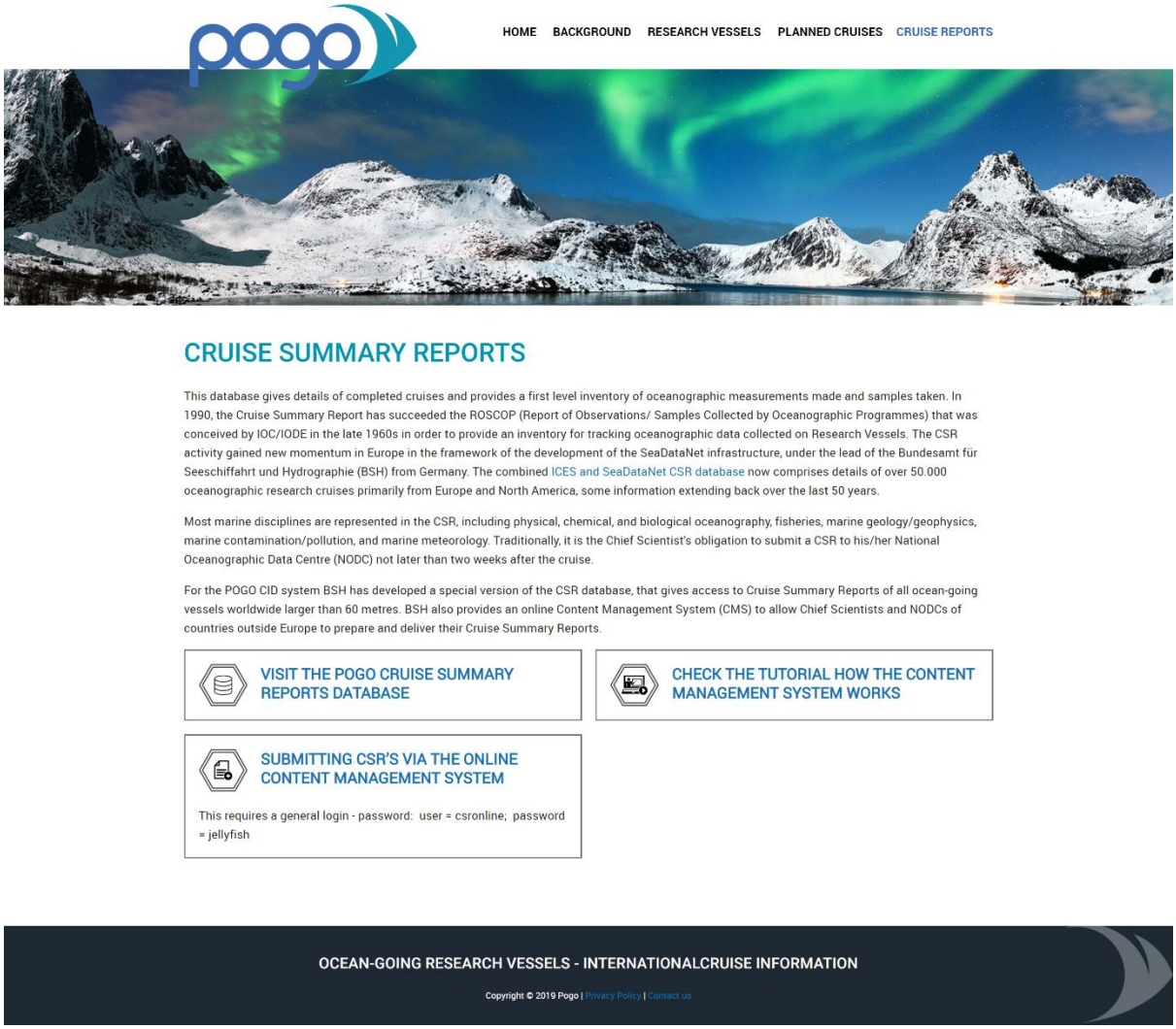

Image: Upgraded POGO CID website at http://www.pogo-oceancruises.org – intro Cruise Programme db

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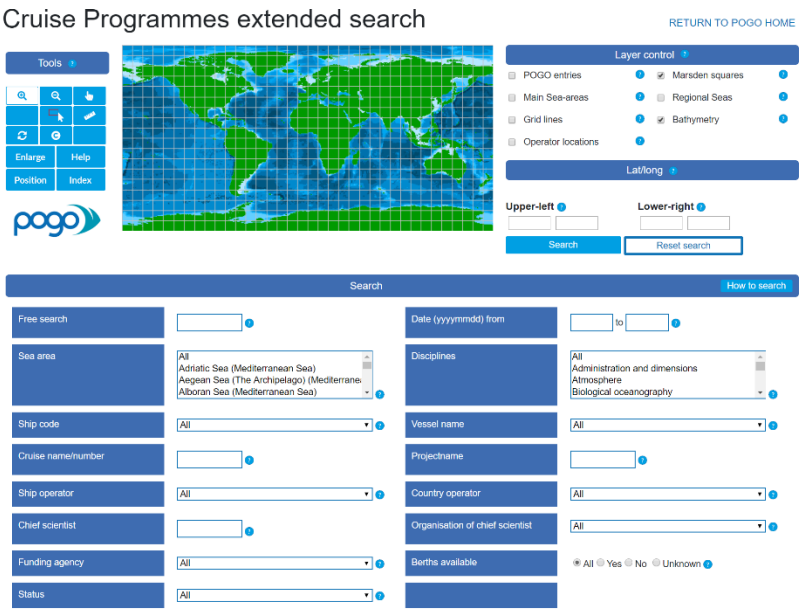

Image: Upgraded POGO CID website at http://www.pogo-oceancruises.org – search cruise programmes

Research Vessel db system

The Research Vessel database is managed by EurOcean. An action will be undertaken to update this database with RV details for as many research vessels as possible from European operators (all RVs) and international operators (all ocean-going RVs). A standardised format will be specified by EurOcean for entering and maintaining RV details. The completed RV entries are currently published through existing RV user interfaces at the EVIOR portal, and POGO CID portal. However as indicated earlier, EurOcean is undertaking a major upgrading of its series of infobases, integrating these into a common user interface for several categories of research infrastructures, of which RVs and special equipment are components. This major upgrade has to be finalised by EurOcean before further plans will be made by them for Eurofleets+ and POGO.

Dynamic Vessel Tracking & Events system

The '**Dynamic Vessel Tracking & Events system**' should become a common system for giving public e-access to the en-route metadata and data from sailing Eurofleets+ research vessels. The input for this user interface will be delivered by the operators of the research vessels that are adopting the Eurofleets data management approach and implementing the components that will support the metadata and data gathering on board the research vessels and the transfer from RVs to operators and from there to the EVIOR portal. These data flow components will be further developed and implemented as part of Tasks 3.1.2 – 3.1.5.

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As detailed in Deliverable D9.5, one part of the Eurofleets+ data flow plan is to make use and later upgrade the EARS V2 shipboard software suite, and to install and configure the EARS V2 and later V3 system on all Eurofleets+ vessels in various configurations, depending on the existing situations at these research vessels.

Another part of the Eurofleets+ data flow plan is to gather, store and transfer at a regular interval the **en-route data** to the data centre of the vessel operator and, after local validation, also make this or a selection, available by web service in a standard json protocol to MARIS, as manager of the Eurofleets+ EVIOR (European Virtual Infrastructure in Ocean Research) platform. This will allow for publishing the en-route data and metadata per cruise at the EVIOR portal as part of the 'Dynamic Vessel Tracking & Events System'.

Further discussion is planned between CSIC, IFREMER, and RBINS as developers of the EARS system and responsible for its deployment at RVs, and MARIS as developer and responsible of EVIOR and the Dynamic Vessel Tracking & Events System'.

A possible solution for the office system at the RV operators might be to adopt the **SWE Ingestion Service** that recently has been developed by 52North in the framework of the EU SeaDataCloud project and that is made available as an Open Source solution.

The SeaDataCloud project has built upon the Sensor Web Enablement (SWE) standards to support the interoperable sharing of near-real time observation data streams. This comprises especially two components:

- SWE Ingestion Service: The aim of this component is to support sensor operators, researchers and data owners during the publication of collected marine observation data. It helps to publish streams of near-real time observation data via SOS servers by first describing the structure of the data stream and then enabling an automated data publication process.
- SWE Viewing Services: This component, which is based on the 52°North Helgoland Sensor Web Viewer, is an application for exploring and visualising data streams from operational sensors and platforms available via the SeaDataCloud infrastructure.

In summary, the SeaDataCloud components, which are available as open source software, cover both aspects, the publication of sensor data streams as well as the provision of client applications for exploring and visualising observation data.

Translated to the Eurofleets+ situation, the SWE Ingestion Service software could be adopted and configured at the RV operators in order to receive and store the data streams coming from EARS from the sailing RVs and to make (part of) this available by Sensor Observing System services. Then, the SWE Viewing Services could be adopted by the EVIOR portal to retrieve the streams from the SOS services at the various RV operators and to visualise these by sailing tracks and en-route data time series. And, also each of the RV operators could adopt the same SE Viewing Services to present the sailing tracks and en-route data of their own RVs at their own organisation website.

More information on the SWE solution of 52North can be found at:

https://www.seadatanet.org/Software/Sensor-Web-Viewer/Documentation

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Eurofleets+ data sets catalogue

As detailed in Deliverable D9.5, the **research data** from each Eurofleets+ TA cruise will be incorporated and made available for users as part of the SeaDataNet CDI data discovery and access service. For EVIOR, this will provide a major basis for the planned **Eurofleets+ data sets catalogue**. This component will consist of a dynamic overview table giving an overview of Eurofleets+ TA cruises. For each entry, links will be incorporated to relevant attributes, to be detailed by EVIOR components. The following table gives a draft overview of planned attributes.

Attribute	**Links**
Eurofleets+ TA Cruise ID	To be agreed with WP4 team who oversee Calls and follow-up for TA cruises
Cruise Plan	Dedicated link to retrieve details from **EF+ Cruise Programme database**
Research Vessel	Dedicated link to retrieve details from **EF+ Research Vessel database**
Cruise Summary Report	Dedicated link to retrieve details from **EF+ Cruise Summary Reports database**
En-route data	Dedicated link to retrieve details from **EF+ Dynamic Vessel Tracking & Events system**
Research data	Dedicated link to retrieve details from **CDI data discovery and access service** (shortlist of CDI entries with data access)

Table 1: Draft table of attributes of the Eurofleets+ data sets catalogue (derived from D9.5)

This way, users will have a direct overview of Eurofleets+ TA cruises and options for retrieving details, when these become available over time, starting with details of the Cruise Plan and the Research Vessel. Subsequently, this is expanded with the ship tracks and en-route information and data while sailing and after completion of the cruises, followed by the Cruise Summary Reports, and finally overview and access to the collected and validated data sets. The primary user interface will be a table; however, several of the detail pages of the attributes will include dynamic mapping options for displaying the ship tracks and the detailed positions of data acquisitions.

This new EVIOR component will be further developed in the coming months by WP9 in synergy with WP3 and WP4, to be ready in time for supporting the implementation of the data management plan for the Eurofleets+ TA cruises.

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