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EVIOR portal with selected functionality



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	Name	Organisation	Date
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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

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:

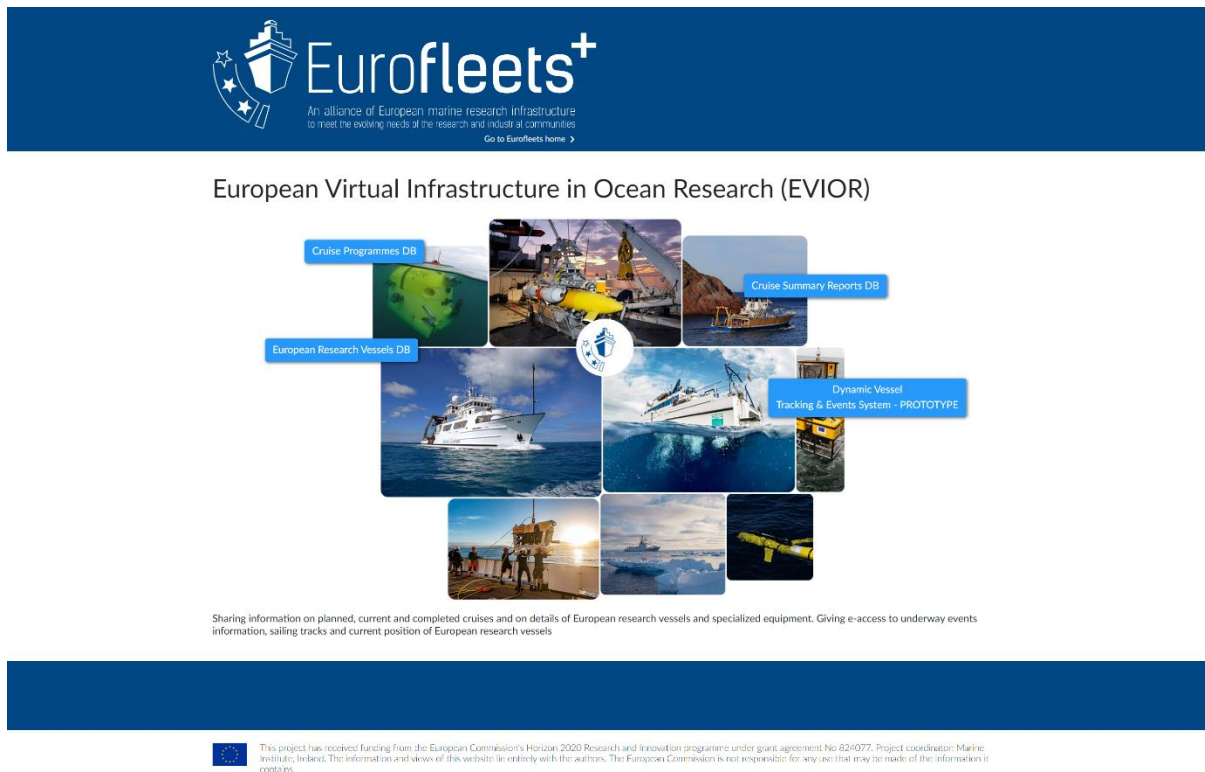


Image: landing page of EVIOR platform, giving access to each of the components

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.

Cruise Programmes

[RETURN TO EVIOR HOME](#)

Geographical box

Time period

Research Vessel

Country operator

Status

Discipline

Sea area

Related actions:

Belgica (366)

Celtic Voyager (232)

Celtic Explorer (170)

G.O. Sars (132)

Heincke (131)

... More

Germany (713)

Norway (473)

Ireland (402)

Belgium (372)

United Kingdom (297)

... More

Completed (3562)

Scheduled (4)

Current (1)

Physical oceanography (460)

Biological oceanography (455)

Marine geology (429)

Chemical oceanography (272)

Cross-discipline (235)

... More

North Sea (697)

North Atlantic Ocean (500)

Baltic Sea (296)

North East Atlantic Ocean (limit 40W) (223)

Celtic Sea (195)

... More

Extended Search

Updating

Cruise Summary Reports

Research Vessels



This directory gives cruise programmes of selected research vessels from European operators. The numbers in brackets behind the items in the left menu column indicate the number of related programme records. A user can select relevant programme records and narrow down its selection by clicking on these items in the left menu column. The individual records give further details on the planned cruise and related contacts. Clicking on the vessel name gives a detailed factsheet of the RV characteristics. Clicking on the organisation names gives the full addresses. The button on the right side of the Map gives the user a menu to select map layers. The user can also click on a button to retrieve previous Cruise Summary Reports (CSR) of the selected research vessel.

The Cruise Programme directory is maintained with input from the operators of the research vessels using a survey format. Operators can deliver their planning as a file for import into the database. This file has to conform to the survey format. Alternatively, operators can use an online Content Management System to update the planning of their ocean-going cruises regularly online.

The compilation of the cruise programme directory is coordinated by MARIS who is approaching all operators that are managing identified research vessels. At the same time qualifying operators are invited to contact MARIS by e-mail, so that arrangements can be agreed for their regular input by file transfer or by online CMS.

There is also an Extended search interface available, which includes additional search criteria and combinations, but requires more knowledge of the user. Moreover the user can search in the other directories for Cruise Summary Reports and Research Vessels databases.

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

Cruise Programmes

[RETURN TO EVIOR HOME](#)

Geographical box

Time period

Country operator

Status

Completed (170)

Discipline

Fisheries and aquaculture (49)
 Biological oceanography (36)
 Physical oceanography (35)
 Marine geology (27)
 Chemical oceanography (14)
[... More](#)

Sea area

North Atlantic Ocean (63)
 Celtic Sea (42)
 North East Atlantic Ocean (limit 40W) (25)
 Atlantic Ocean (23)
 North Sea (19)
[... More](#)

Related actions:

[Extended Search](#)
[Updating](#)
[Cruise Summary Reports](#)
[Research Vessels](#)

Start » Celtic Explorer



Zoom in to selected 20 50 100 records [Go](#)

| Found 170 | Show (1-20) | Previous | Next 20

Cruise name	Vessel name	Country operator	Departure	Arrival	Berths	Status	Show
Irish Groundfish Survey Leg 2	Celtic Explorer	Ireland	2017-11-05	2017-12-09	Unknown		→
Celtic Sea Herring Acoustic Survey	Celtic Explorer	Ireland	2017-10-15	2017-11-04	Unknown		→
Irish Groundfish Survey Leg 1	Celtic Explorer	Ireland	2017-10-03	2017-10-14	Unknown		→
CE17014 Infomar 2	Celtic Explorer	Ireland	2017-09-22	2017-10-02	Unknown		→
CE17013 BSH 2 North Sea Survey	Celtic Explorer	Ireland	2017-08-11	2017-09-18	Unknown		→
CE17012 Infomar	Celtic Explorer	Ireland	2017-07-22	2017-08-06	Unknown		→
CE17011 Western European Shelf Pelagic Acoustic 2	Celtic Explorer	Ireland	2017-07-04	2017-07-21	Unknown		→
CV7017 Aran/Porcupine UWTV Nephrops Survey	Celtic Explorer	Ireland	2017-06-18	2017-06-29	No		→
CE17009 Western European Shelf Pelagic Acoustic 1	Celtic Explorer	Ireland	2017-06-06	2017-06-29	Unknown		→
CE17008 Exploiting and Conserving Deep-Sea Genetic	Celtic Explorer	Ireland	2017-05-24	2017-06-05	Unknown		→
CE17007 Go-Ship Transatlantic Section A02	Celtic Explorer	Ireland	2017-04-27	2017-05-23	Unknown		→
CE17006 Transit Survey	Celtic Explorer	Ireland	2017-04-19	2017-04-26	Unknown		→
CE17005 Anglerfish and Megrim Trawl Survey 2	Celtic Explorer	Ireland	2017-04-08	2017-04-17	Unknown		→
CE17004 Blue Whiting Acoustic Survey	Celtic Explorer	Ireland	2017-03-18	2017-04-07	Unknown		→
CE17003 Anglerfish and Megrim Trawl Survey	Celtic Explorer	Ireland	2017-02-14	2017-03-17	Unknown		→
CE17001 BSH Survey No. 1	Celtic Explorer	Ireland	2017-01-19	2017-01-31	No		→
CE17002 Ocean Climate Section - West Ireland	Celtic Explorer	Ireland	2017-01-06	2017-02-13	No		→
Irish Groundfish Survey Leg 2	Celtic Explorer	Ireland	2016-11-14	2016-12-18	Unknown		→
BSH Oceanographic Winter Survey	Celtic Explorer	Ireland	2016-11-01	2016-11-09	Unknown		→
Celtic Sea Herring Acoustic Survey	Celtic Explorer	Ireland	2016-10-07	2016-10-27	Unknown		→

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

Cruise Summary Reports search

[RETURN TO EVIOR HOME](#)

Free search	<input type="text"/>	1	Date from (yyyy-mm-dd)	<input type="text"/>	Date to	<input type="text"/>	1
Country of ship	All	2	Ship(s)	All ACC Mosby Aegaeo Akademik			2
Project	All	3	Oceans/Sea area(s)	All			3
Cruise name/nr	<input type="text"/>	4	Data type(s)	Acoustic reflection on marine organisms. Alkalinity Ammonia Atmospheric chemistry			4
Discipline	All	5	Institute(s)	Aarhus University, Department of Bioscience. Aarhus University, Department of Bioscience. Adour-Garonne Water Agency Agri-Food and Biosciences Institute			5
Ports	All		<input type="button" value="Search"/> <input type="button" value="Reset search"/>				
Country of institute	All						

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

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

Bay of Biscay

General Ocean Areas

Bounding Box(es)

South

West

North

East

45.4

-1.9

45.8

-1.4

Specific Geographic Areas

Vasière Ouest Gironde

Project

Project title

LEFE

Objectives

The JERICOBent-7 cruise (10-15 July 2019, RV Cotes 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 areas 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 Kullenberg 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

[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

Dynamic Vessel Tracking & Events System - PROTOTYPE [RETURN TO EVIOR HOME](#)

1. Select first which vessel to inspect

- ☐ Sarmiento de Gamboa
- ☒ Hesperides
- ☐ Thalassa
- ☐ Garcia Del Cid

2. Select Track

2018-06-24T00:00:53 (226762)

Track info

Date	Speed	Bearing
2018-06-25T06:42:31	11.8	102.93
2018-06-25T06:43:36	10.7	101.18
2018-06-25T06:44:37	11.0	98.5
2018-06-25T06:45:38	11.1	99.0
2018-06-25T06:46:39	10.6	97.96
2018-06-25T06:47:40	10.5	94.8
2018-06-25T06:48:41	10.0	96.58
2018-06-25T06:49:42	9.9	94.45
2018-06-25T06:50:43	10.2	96.62
2018-06-25T06:51:44	10.0	89.61
2018-06-25T06:52:45	10.1	90.17
2018-06-25T06:53:46	10.0	95.05
2018-06-25T06:54:47	10.0	92.9
2018-06-25T06:55:48	9.0	90.03
2018-06-25T06:56:49	8.9	92.79
2018-06-25T06:57:50	9.6	89.86
2018-06-25T06:58:51	9.8	89.7

Play

Fast


Stop

Reset

Follow

Hesperides

[Link to vessel details](#)



Summary of SSR

[View track data](#)

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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.



Eurofleets European Vessel Database



This directory is a searchable database of European research vessels. Operators/managers can enter/update their research vessels [online](#) or by contacting the [helpdesk](#).

[Cruise Programmes database](#)

[Cruise Summary Reports database](#)

[Large Exchangeable Instruments database](#)

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Operating RVs

Prepare your query with a combination of the following criteria:

<input type="text" value="[Vessel Name]"/>	<input type="text" value="[Vessel Category]"/>
<input type="text" value="[Country]"/>	<input type="text" value="[Length]"/>
<input type="text" value="[Main Activity]"/>	<input type="text" value="[Available for charter]"/>
<input type="text" value="Operating RVs"/>	<input type="button" value="reset"/> <input type="button" value="search"/>

Search results Your search has returned 306 vessels.

[Print PDF](#)

Vessel Name	Country	Category	Length
Aade	Germany	Local/Coastal	12.50 m
Actinia	United Kingdom	Local/Coastal	10.85 m
Aegaeo	Greece	Oceanic	61.50 m
Águas Vivas	Portugal	Local/Coastal	11.00 m
Akademik	Bulgaria	Oceanic	55.50 m
Akademik A. Karpinsky	Russia	Global	104.50 m
Akademik Ioffe	Russia	Global	117.10 m
Akademik Lazarev	Russia	Global	81.80 m
Akademik Mstislav Keldysh	Russia	Global	122.20 m

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



Eurofleets European Vessel Database



[< Back to Search](#)

Polarstern

[Print PDF](#)



Status Operating
Main activity Ice-going Operations
Operating area Arctic Ocean; Atlantic Ocean; Antarctic Seas
Country Germany
ICES code 06AQ
NODC code 06AQ
Call sign DBLK
Year built 1982
Homeport Bremerhaven
Length 118.00 m
Avail. for charter No
Last update 03.06.2016

This directory is a searchable database of European research vessels. Operators/managers can enter/update their research vessels [online](#) or by contacting the [helpdesk](#).

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Contact Information

Owner	BMBF - Federal Ministry of Education and Research
Operator	Alfred Wegener Institute for Polar and Marine Research
Contact person	AWI-Vessel Coordination
Address	Alfred Wegener Institute for Polar and Marine Research, Am Handelshafen 12, D-27570 Bremerhaven, Germany
Telephone	+49(471)4831-2241
Fax	+49(471)4831-
Website	http://www.awi.de/en/infrastructure/ships/polarstern/
Email	Schiffskoord@awi.de
Observations	--

Technical Details

Main Dimensions

Length	118.00
Freeboard to Work Deck (m)	4.0
Draft (m)	11.21

Main Vessel Activity

Main Activity	Ice-going Operations
----------------------	----------------------

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

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.

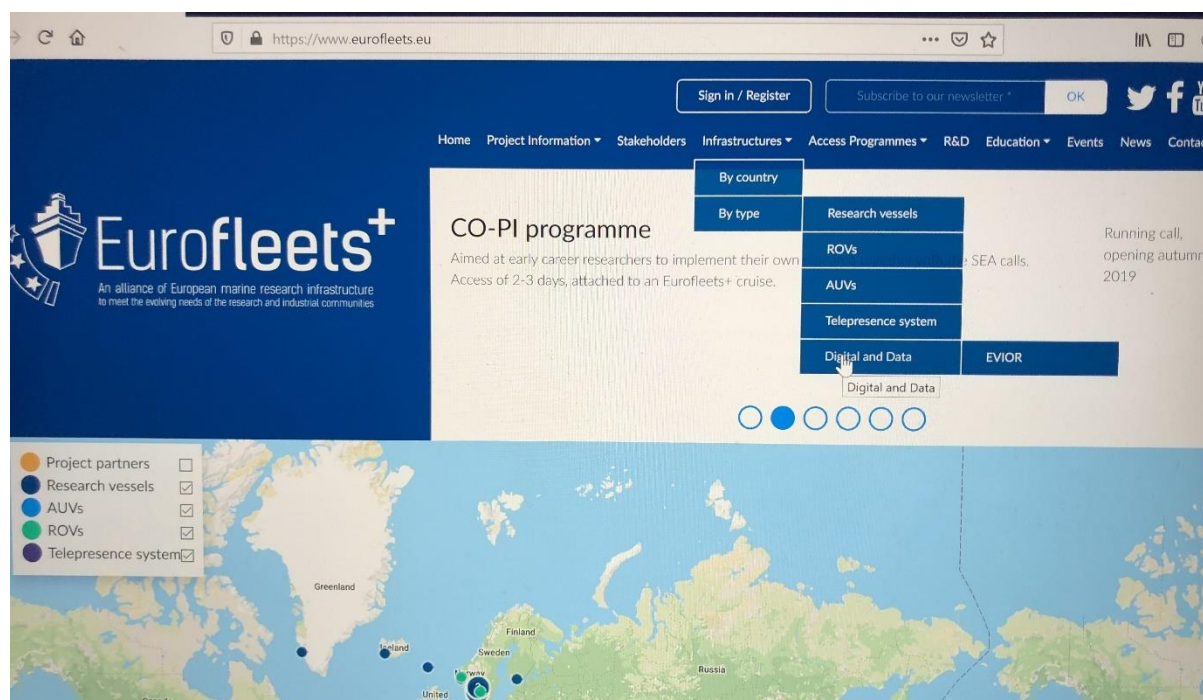
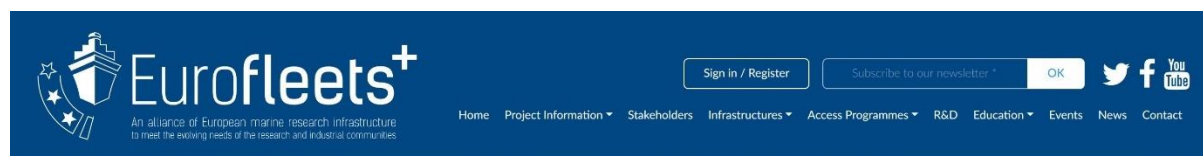


Image: Menu structure of <https://www.eurofleets.eu> with menu option for EVIOR platform



Home > Digital and Data > European Virtual Infrastructure in Ocean Research (EVIOR)

European Virtual Infrastructure in Ocean Research (EVIOR)

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.

The **EVIOR platform** has been set up and will be further developed and populated to provide up-to-date information about research vessels (RV), cruise programmes, completed cruises, and tracks of cruises. It is an ultimate goal to give e-access to underway and operational information and data from sailing research vessels. 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.

VISIT THE EVIOR PLATFORM

Currently, the EVIOR platform provides access to the following databases:

- **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 – PROTOTYPE**, giving dynamic charts of sailing tracks of selected RVs with position, speed, and bearing as well as 24

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

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

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
			Havfisker 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 Schifffahrt	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	

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

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

(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.

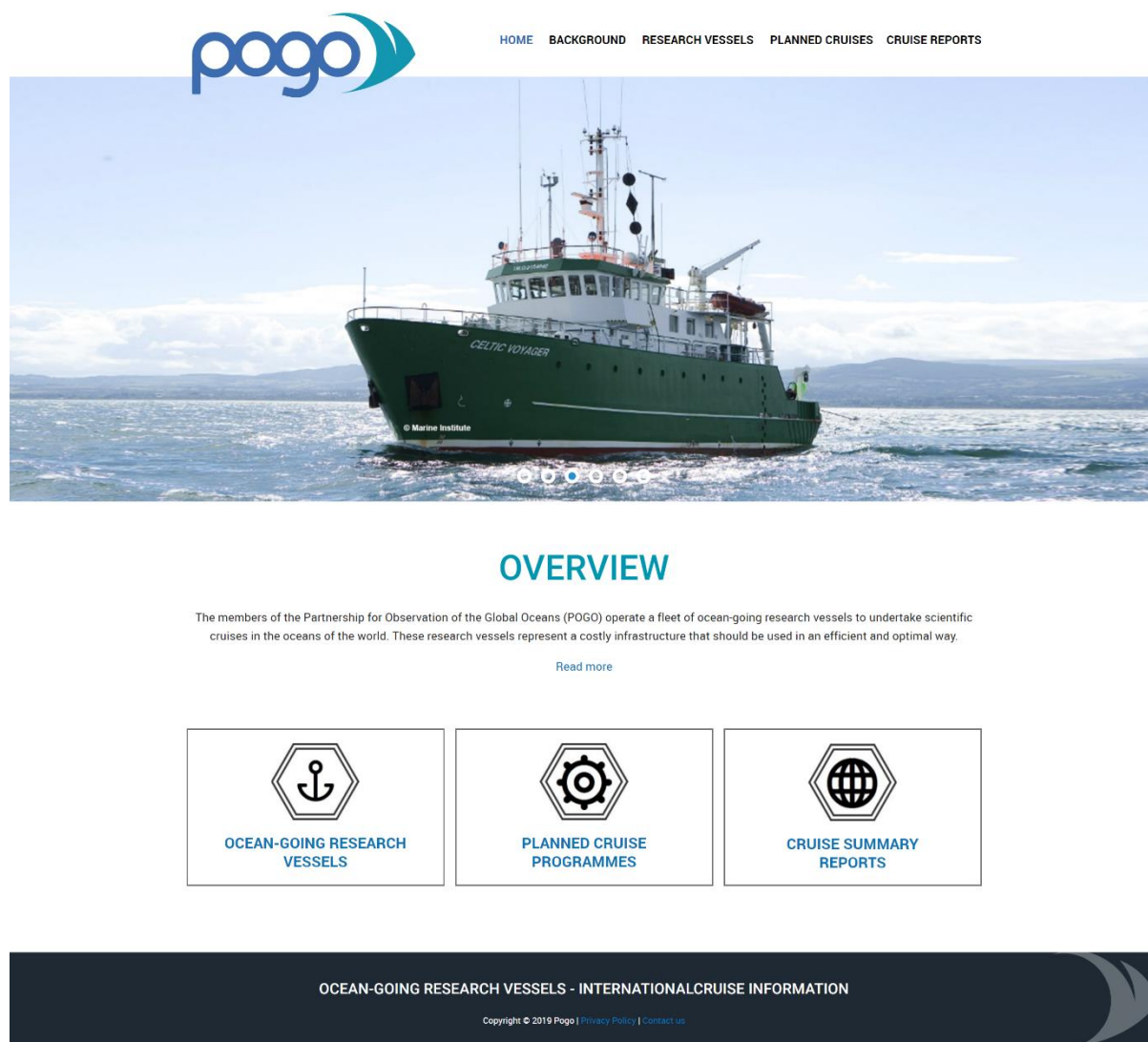


Image: Upgraded POGO CID website at <http://www.pogo-oceancruises.org> - homepage



CRUISE SUMMARY REPORTS

This database gives details of completed cruises and provides a first level inventory of oceanographic measurements made and samples taken. In 1990, the Cruise Summary Report has succeeded the ROSCOP (Report of Observations/ Samples Collected by Oceanographic Programmes) that was conceived by IOC/IOOE in the late 1960s in order to provide an inventory for tracking oceanographic data collected on Research Vessels. The CSR activity gained new momentum in Europe in the framework of the development of the SeaDataNet infrastructure, under the lead of the Bundesamt für Seeschifffahrt und Hydrographie (BSH) from Germany. The combined ICES and SeaDataNet CSR database now comprises details of over 50.000 oceanographic research cruises primarily from Europe and North America, some information extending back over the last 50 years.

Most marine disciplines are represented in the CSR, including physical, chemical, and biological oceanography, fisheries, marine geology/geophysics, marine contamination/pollution, and marine meteorology. Traditionally, it is the Chief Scientist's obligation to submit a CSR to his/her National Oceanographic Data Centre (NODC) not later than two weeks after the cruise.

For the POGO CID system BSH has developed a special version of the CSR database, that gives access to Cruise Summary Reports of all ocean-going vessels worldwide larger than 60 metres. BSH also provides an online Content Management System (CMS) to allow Chief Scientists and NODCs of countries outside Europe to prepare and deliver their Cruise Summary Reports.



**VISIT THE POGO CRUISE SUMMARY
REPORTS DATABASE**



**CHECK THE TUTORIAL HOW THE CONTENT
MANAGEMENT SYSTEM WORKS**



**SUBMITTING CSR'S VIA THE ONLINE
CONTENT MANAGEMENT SYSTEM**

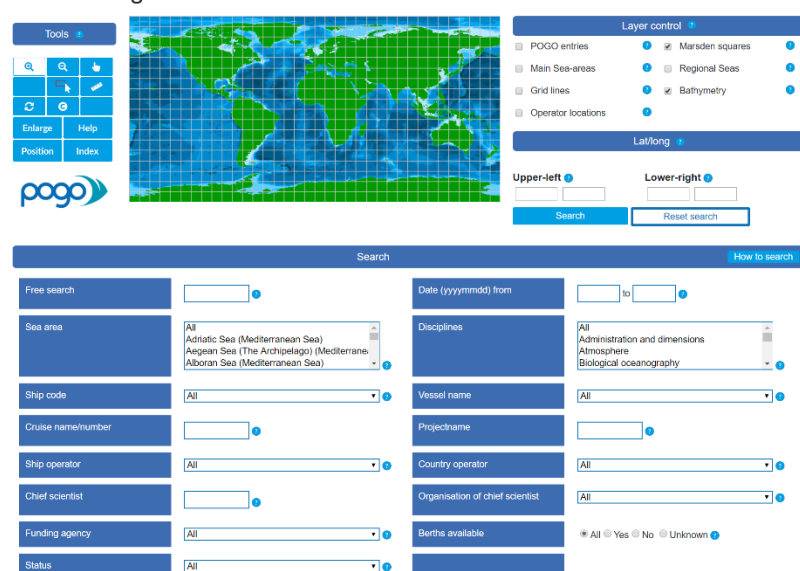
This requires a general login - password: user = csronline; password = jellyfish

OCEAN-GOING RESEARCH VESSELS - INTERNATIONALCRUISE INFORMATION

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

Cruise Programmes extended search



The screenshot shows the 'Cruise Programmes extended search' interface. It features a world map with a grid overlay. To the left of the map is a 'Tools' panel with buttons for 'Enlarge', 'Help', 'Position', and 'Index'. To the right of the map is a 'Layer control' panel with checkboxes for 'POGO entries', 'Main Sea-areas', 'Grid lines', 'Operator locations', 'Marsden squares', 'Regional Seas', and 'Bathymetry'. Below the map is a 'Lat/long' panel with 'Upper-left' and 'Lower-right' input fields and 'Search' and 'Reset search' buttons. At the bottom is a 'Search' panel with various filters: 'Free search', 'Sea area' (dropdown), 'Ship code' (dropdown), 'Cruise name/number', 'Ship operator' (dropdown), 'Chief scientist', 'Funding agency' (dropdown), 'Status' (dropdown), 'Date (yyyymmdd) from' (input), 'Disciplines' (dropdown), 'Vessel name' (input), 'Project name' (input), 'Country operator' (dropdown), 'Organisation of chief scientist' (dropdown), and 'Berths available' (radio buttons).

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.

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>

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.