

# Regular updates of the EVIOR portal 22 March 2017 – Version 1

Grant Agreement n° 312762

Acronym: EUROFLEETS2

Title: New operational steps towards an alliance of

European research fleets

**Activity type: NA** 

WP N°: 4 Task N°: 4.3

**Deliverable N°: D4.43** 

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Reference: EUROFLEETS2-WP4-D4.43-22032017-V1.doc

Security: Public



Document information				
Document Name	Regular updates of the EVIOR portal			
Document ID	EUROFLEETS2-WP4-D4.43-220317-V1.doc			
Revision	V1			
Revision Date	22/03/2017			
Author	D.M.A. Schaap – MARIS with contributions from BODC, BSH and EurOcean			
Security	Public			

Approvals							
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Activity							
Coordinator							
WP Leaders							

History						
Revision	Date	Modification	Author			
1	22/03/2017	First release	DMA Schaap			

Diffusion list		
All partners		
EU		

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#### 1. Introduction

The objectives of EUROFLEETS2 WP4 TASK 4.3 Subtask 1 are to improve information sharing on planned, current and completed cruises and on details of ocean-going research vessels and specialised equipment owned by the EUROFLEETS2 beneficiaries, to enhance awareness of opportunities among the beneficiaries, and to durably improve cost-effectiveness of cruises. Therefore the WP4 partners maintain the population of databases as part of the European Virtual Infrastructure in Ocean Research (EVIOR). These databases concern:

- Research vessels, maintained by EurOcean with input of RV operators
- Cruise Programmes, maintained by BODC and MARIS with input of RV operators
- Cruise Summary Reports, maintained by BSH and MARIS with input from the SeaDataNet NODC's
- European Large Exchangeable Instruments, maintained by EurOcean with input of research institutes

These operations are continued from the previous EUROFLEETS project in which the initial EUROFLEETS Integrated Information Portal has been developed and launched mid March 2010. In May 2013 this has been upgraded to the European Virtual Infrastructure in Ocean Research (EVIOR) which is operational since.

The EVIOR portal can be found at the EUROFLEETS main website: <a href="http://www.eurofleets.eu">http://www.eurofleets.eu</a>.

This progress report gives an overview of the activities undertaken for populating and maintaining the infobases and the results achieved in the period up to M48 (March 2017). It also gives an overview of the usage of the portal by various users.

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#### 2. Modules of the EUROFLEETS European Virtual Infrastructure in Ocean Research - EVIOR

The EUROFLEETS European Virtual Infrastructure in Ocean Research - EVIOR portal can be found from the EUROFLEETS main website: http://www.eurofleets.eu



### European Virtual RV Platform expanded with modules for a Generic Cruise Planning System and for Dynamic Vessel Tracking & Events System

A generic cruise planning system will facilitate a more efficient and harmonised planning and improved flow of programme information from operators to the Cruise Programme database. Therefore a DEMONSTRATOR of such a Eurofleets generic cruise planning system has been developed and launched. The main aim of the DEMONSTRATOR is to show the features that can be offered by such a cruise planning system. As example, cruises funded in the framework of the Eurofleets Transnational Access Activities (TNA) have been considered, and the results after the planning processes can be consulted. It is an ultimate goal of Eurofleets to establish a common system for giving e-access to underway and operational information and data from sailing research vessels. A first step has been undertaken in analysing and exploring the options by developing and launching a PROTOTYPE Dynamic Vessel Tracking & Events System. It gives dynamic charts of the momentary position and sailing tracks of selected RVs with position, speed, and bearing as well as 24 hour Ship Summary Reports (SSR) by clicking on any position of the vessel track; the SSR includes options to retrieve the event logs for the fixed instruments on board of the RVs.

The Eurofleets project has developed the **European Virtual Infrastructure in Ocean Research (EVIOR)** by way of an integrated information portal, providing up-to-date information about research vessels (RV), cruise programmes, completed cruises and special equipment. This portal is operational and maintained since March 2010 with in 2012 an expansion with large equipment information. In 2013 two more services have been added by means of a Generic Cruise Planning System and for Dynamic Vessel Tracking & Events System. The portal development did not start from scratch, but it integrates and upgrades a number of existing database modules from the SeaDataNet pan-

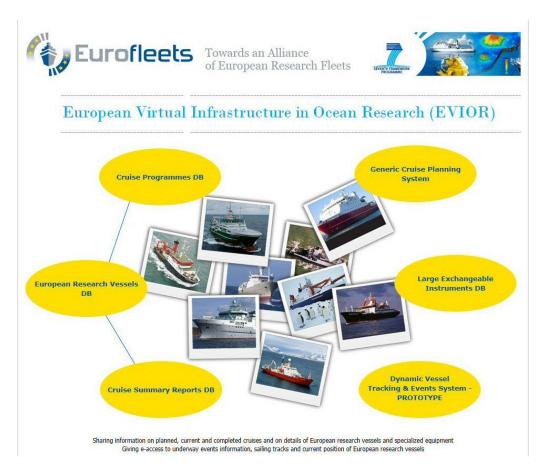
European marine and ocean data management infrastructure, European and POGO - Partnership for Observation of the Global Oceans.

#### Intro to the EUROFLEETS EVIOR portal at the EUROFLEETS website

The EUROFLEETS main website gives a menu option to the EVIOR portal and an introductory page to present the EVIOR portal and its modules. The **European Virtual Infrastructure in Ocean Research (EVIOR)** has been implemented by way of an integrated information portal, providing up-to-date information about research vessels (RV), cruise programmes, completed cruises and special equipment. This portal is operational and maintained since March 2010 with in 2012 an expansion with large equipment information. In 2013 two more services have been added by means of a Generic Cruise Planning System and for Dynamic Vessel Tracking & Events System. The portal development did not start from scratch, but it integrates and upgrades a number of existing database modules from the SeaDataNet pan-European marine and ocean data management infrastructure, EurOcean and POGO - Partnership for Observation of the Global Oceans.

Clicking on the "Visit the EUROFLEETS Integrated Information Portal" leads to the main menu of the EVIOR portal as given below.





#### Main menu of the EVIOR portal

The EVIOR portal gives access to the following 4 main infobases:

- 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 contact 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
- European Large Exchangeable Instruments (LEXI) database, containing characteristics of twenty seven categories of instruments, including the previous LEXI large Exchangeable Instruments InfoBase and the UV European Underwater Vehicles InfoBase

In addition it gives access to:

- Prototype for a Dynamic Vessel Tracking & Events System
- Generic Cruise Planning System

This Deliverable D4.43 reports about the population of the 4 main infobases till M48.

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#### 3. Population, maintenance and usage of the Cruise Programme database

This database contains planned cruises per research vessel and owner / operator. Entries are to be collated from vessel operators and managed by BODC (contact: Louise Darroch atlorr@bodc.ac.uk) subcontractor to MARIS in EUROFLEETS 2, while the database is technically managed and operated by MARIS.

The Cruise Programme database was developed and launched with instructions and user manual for metadata collection/update by beneficiaries early 2010 and distributed to beneficiaries together with a template spreadsheet to be completed with cruise programme information. In 2015 an update has taken place by adopting the new version of the SeaDataNet Controlled Vocabularies (NVS2.0). The information required for the Research Vessel Cruise Programme Database is summarised below.

#### Research Vessel Cruise Programme Database Fields

Information requested	Vocabulary	Mandatory?	Comments
ICES Ship Code	C17	Mandatory	Provided on the list of research vessels and contacts
Cruise name/number		Mandatory	
Ship Operator	EDMO	Mandatory	Select entry from EDMO (e.g. EDMO Record Id)
Country of Ship Operator	C32	Mandatory	Select entry from vocabulary (e.g. BE = Belgium)
Departure Port	C38	Mandatory	Select entry from vocabulary (e.g. BSH118 = Lisbon)
Arrival Port	C38	Mandatory	Select entry from vocabulary
Departure Date		Mandatory	Year, month, day (YYYY-MM-DD)
Arrival Date		Mandatory	Year, month, day (YYYY-MM-DD)
Specific Area		Mandatory	Brief description of area to be visited
General Area	C16		These are based on IHB Sea Areas, but with some
General Area 2	C16		extensions for SeaDataNet (e.g. 28C = Strait of
General Area 3	C16		Sicily).
General Area 4	C16		
Latitude (most southerly)		Mandatory	Most southerly latitude (dd.[dd]) between +90 and - 90. Latitudes south of the equator are negative.
Latitude (most northerly)		Mandatory	Most northerly latitude (dd.[dd]) between +90 and - 90. Latitudes south of the equator are negative.
Longitude (most westerly)		Mandatory	Most westerly longitude (ddd[.dd]) between +180 and -180. Longitudes west of zero are negative
Longitude (most easterly)		Mandatory	Most easterly longitude (ddd[.dd]) between +180 and -180. Longitudes west of zero are negative.
General Discipline 1	P08		Select entry from vocabulary (e.g. DS01 = biological oceanography)
General Discipline 2	P08		Select entry from vocabulary
Chief Scientist name		Mandatory	
Chief scientist e-mail			
Organisation of Chief Scientist	EDMO		Select entry from EDMO (e.g. EDMO Record Id)
Funding Agency 1	EDMO	Mandatory	Select entry from EDMO (e.g. EDMO Record Id)
Funding Agency 2			
Proposal ID			
Project			Name and acronym of main project or experiment with which the cruise is associated (e.g. CLIVAR, RAPID, IMBER)
Subsidiary project 1			Other project or experiment associated with the
			cruise



Subsidiary project 2			Other project or experiment associated with the cruise
Berths Available	Y, N, U	Mandatory	Choose from Yes (Y), No (N) or Unknown (U)
Link to other relevant web sites 1			e.g. cruise or project website if available
Link to other relevant web sites 2			e.g. cruise or project website if available
Cruise Objectives			Any other relevant information, e.g. brief summary of cruise objective
Cruise status	L14	Mandatory	Use terms from L14 mapped as follows: PO = Scheduled; OP = Current; IA = Completed; CA = Cancelled
Planned cruise track			Name of image file showing planned cruise track if available (gif, jpg, jpeg)

#### Table: Metadata fields for Cruise Programme database

As far as possible the database has built on the work already carried out for the Partnership for Observation of the Global Ocean (POGO) and utilises the European Directory of Marine Organisations (EDMO) and common vocabularies developed and maintained by the EU FP6 - FP7 SeaDataNet projects.

In early 2010, beneficiaries were requested for the first time to provide the information required using a spreadsheet template. Alternatively provision was made for the information to be entered manually into an online Content Management System (CMS). Ever since each year updates are requested from the RV operators, giving a choice of both options. This has also resulted in a number of RV operators asking for an online account to the Cruise Programme online CMS to enter their entries themselves, while others make use of the spreadsheet template. The current status for the cruise programme database is given below:

Country	Research Vessels	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	Belgica	40	38	37	38	36	36	27	0
	Simon Stevin		0	0	0	0	6	0	0
Denmark	Dana	0	0	0	0	0	3	3	14
	Havfisken	0	0	0	0	0	0	0	15
Estonia	Salme	0	5	0	0	0	0	7	6
Finland	Aranda	0	0	0	0	0	10	12	0
France	L'Atalante	5	8	9	0	7	7	0	11
	Le Suroit	5	4	5	1	4	5	0	0
	Marion Dufresne	6	3	6	0	0	1	0	0
	Pourquoi pas?	12	12	9	0	8	7	0	5
	Thalassa	8	3	9	0	6	6	0	7
Germany	Heincke	0	29	21	20	0	19	42	0
	Maria S. Merian	0	0	12	14	9	5	22	3
	Meteor	1	14	16	15	1	7	24	9
	Polarstern	9	11	10	16	11	9	16	18
	Poseidon	0	16	20	22	0	0	30	4
	Sonne	1	7	8	13	8	2	22	16
	Walther Herwig III	0	10	11	10	0	0	22	1
Greece	Aegaeo	21	10	12	0	0	7	10	0
Iceland	Bjarni Saemundsson	0	0	1	1	0	0	0	0
Ireland	Celtic Explorer	17	17	16	17	19	16	16	17

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	Celtic Voyager	25	33	29	21	19	29	46	30
Italy	G. Dallaporta	0	23	0	0	0	0	0	26
	OGS Explora	5	0	1	0	0	0	0	0
Urania		0	21	0	0	24	11	3	18
Netherlands	Pelagia	8	17	11	19	11	10	4	0
Norway	Dr. Fridtjof Nansen	0	0	0	0	0	0	13	0
	G. M. Dannevig	0	0	0	0	0	35	17	0
	G.O. Sars	0	17	19	1	0	18	19	18
	Haakon Mosby	0	0	0	0	0	25	15	0
	Helmer Hanssen	0	0	10	0	0	0	3	1
	Jan Mayen	0	3	0	0	0	0	0	0
	Johan Hjort	0	16	11	0	0	12	10	14
	Johan Ruud	0	0	0	0	0	0	2	3
	Kristine Bonnevie	0	0	0	0	0	0	0	22
	Lance	0	0	12	0	0	0	0	0
Poland	Oceania	11	16	18	19	16	19	17	15
Portugal	Almirante Gago Coutinho	0	0	2	2	2	4	3	3
	Andromeda	0	0	5	6	3	3	5	2
	Auriga	0	0	6	7	3	0	3	5
	D. Carlos I	0	0	0	1	3	4	3	1
Romania	Mare Nigrum	5	10	9	0	0	9	0	0
Spain	Angeles Alvarino	0	0	0	0	0	14	23	20
	Francisco De Paula								
	Navarro	0	0	0	0	0	10	11	10
	Hesperides	8	8	3	0	0	7	5	0
	Ramon Margalef	0	0	0	0	0	18	22	20
	Sarmiento de Gamboa	9	16	7	0	0	5	4	0
Sweden	Argos	19	0	0	0	0	0	0	0
	KBV 001 Poseidon	0	0	11	0	0	0	0	0
	Unknown	0	0	2	0	0	0	0	0
Turkey	Bilim-2	11	16	13	1	0	0	0	0
United									
Kingdom	Alba Na Mara	0	0	0	0	4	2	1	0
	Cefas Endeavour	0	0	0	17	16	13	15	2
	Discovery	7	11	7	0	2	10	8	14
	Ernest Shackleton	0	0	0	0	0	0	0	0
	James Clark Ross	2	0	0	0	1	4	5	7
	James Cook	4	8	7	1	5	13	5	9
	Scotia	0	15	10	0	3	4	3	0
TOTALS		239	417	395	262	221	425	518	366

Table: Cruise Programme Status since 2010 where the 'Year' is the year of cruise departure

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The total number of cruises in the Cruise Programme Database, including information provided *via* the POGO International Cruise Information System prior to the EUROFLEETS project, has increased in the last year from 3125 to now 3554; the breakdown is shown below.

#### Cruise Programme Status - total number of cruises by year

2007 - 225 cruises

2008 - 253 cruises

2009 - 221 cruises

2010 - 239 cruises

2011 - 417 cruises

2012 - 395 cruises

2013 - 262 cruises

2014 - 221 cruises

2015 - 425 cruises

2016 - 518 cruises

2017 270 amiles

2017 – 378 cruis
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Country	No. of Cruises
Belgium	258
Denmark	35
Estonia	18
Finland	22
France	179
Germany	606
Greece	60
Iceland	2
Ireland	367
Italy	132
Netherlands	80
Norway	316
Poland	131
Portugal	76
Romania	33
Spain	220
Sweden	32
Turkey	41
United Kingdom	235

Table: Cruise Programme Status - total number of cruise programmes by country since 2010

Routine activities include continuing to chase up outstanding cruise programmes, responding to beneficiaries' questions and queries, ensuring that also the research vessel information is kept up to date and encouraging submission of also Cruise Summary Reports.



The following images give illustrations of the Cruise Programme database search dialogue.



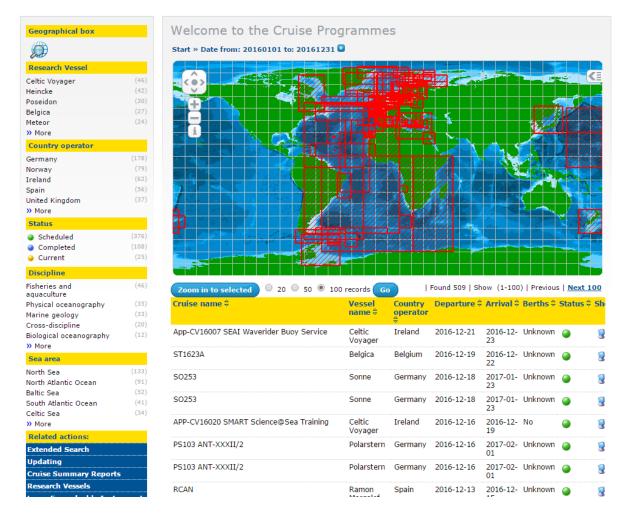


Figure: Cruise Programme database -search for cruises in 2016

The next image gives the details of a selected Cruise Programme entry. It contains various hyperlinks to retrieve:

- More information about the Research Vessel from the EUROFLEETS RV database by Shipcode and Vessel name
- More information about the Ship Operator from the SeaDataNet EDMO (European Directory of Marine Organisations) database
- o More information about the Chief Scientist Organisation from the SeaDataNet EDMO database
- More information from the Funding Organisation from the SeaDataNet EDMO database
- More information about Cruise Summary Reports of the Research Vessel from the EUROFLEETS Cruise Summary Reports database

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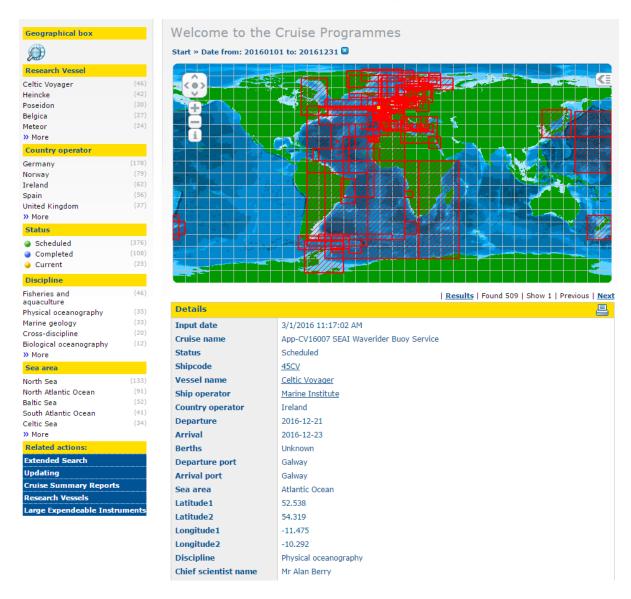


Figure: Cruise Programme database - Detailed factsheet for one planned cruise

#### Usage of the Cruise Programme database

The Cruise Programme database service was launched in March 2010 and user statistics are maintained using AW Stats. The following table gives the number of users and visited pages since March 2010. This also includes the related Cruise Summary Reports database service.

Year	Unique visitors	Number of visits	Pages	Hits	Bandwidth (MB)
2010	377	627	16,568	43,974	233.36
2011	520	769	23,837	55,917	356.42
2012	848	1,186	35,712	75,864	425.39
2013	1,309	2,815	38,874	73,820	1,710.00
2014	1,314	2,028	19,270	39,047	892.79
2015	972	1,545	36,268	63,909	1,700.00
2016	1,273	1,788	36,718	67,593	4,260.00

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Table: Web statistics for the Cruise Programme and Cruise Summary Reports databases

#### 4. Population and maintenance of the Cruise Summary Reports database

The Cruise Summary Reports (CSR) database contains details of completed cruises and provides a first level inventory of oceanographic measurements made and samples taken during the cruises. It is managed as a SeaDataNet Directory by BSH from Germany, who is subcontractor to MARIS in EUROFLEETS2.

In the first EUROFLEETS project a dedicated version of the CSR User Interface has been developed in a cooperation between MARIS and BSH. The EUROFLEETS CSR database is updated automatically by web service from the SeaDataNet CSR database which serves as master containing also many historical reports. The EUROFLEETS CSR database contains entries from 2005 onwards. In 2015 activities were undertaken in EUROFLEETS to upgrade the CSR database, import and user interface to using the new SeaDataNet vocabularies (NVS2.0).

The maintenance of the CSR database is done following the current SeaDataNet practice. The Chief Scientist of a cruise must report a Cruise Summary Report (CSR) immediately after the cruise. There are 2 routes to submit new CSR entries, depending on the country:

- In a number of European countries Chief Scientists of research cruises are requested to report CSR's
  to their National Oceanographic Data Centre (NODC) directly after the cruise, using a local system. The
  NODC will then make sure that the CSR's are included in the overall SeaDataNet CSR database. The
  list of European NODC's can be found at: http://eurofleets.maris2.nl/csr-list-nodcs.html
- in other countries the Chief Scientists of research cruises are requested to report CSR directly themselves via the online CSR Content Management System (CMS).

#### The Cruise Summary Report database currently contains the following content:

Year	No. of Cruise Summary Reports	No. of countries
2005	843	23
2006	958	26
2007	1061	25
2008	1462	24
2009	1502	26
2010	1703	24
2011	1091	25
2012	886	24
2013	900	24
2014	801	24
2015	653	19
2016	133	12

Table: Number of Cruise Summary Reports – 22 March 2017

The overview per country of ship per year is given in the following Table.

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Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Albania	0	1	1	0	0	0	0	0	0	0	0	0
Algeria	0	0	0	0	2	0	0	0	0	0	0	0
Belgium	52	71	70	77	90	102	99	34	30	9	3	0
Bulgaria	5	6	2	1	20	0	5	7	14	8	14	0
Canada	0	0	0	0	0	0	0	0	0	0	2	0
Croatia	16	30	19	19	12	13	17	21	18	14	26	0
Cyprus	11	1	2	6	8	6	7	8	2	4	0	0
Denmark	0	7	7	18	23	22	7	8	4	3	4	2
Estonia	0	0	0	0	0	46	36	30	22	37	27	0
Faroe												
Islands	0	0	0	0	17	20	22	21	21	20	20	0
France	191	207	215	252	195	237	217	210	216	206	213	3
Georgia	0	0	0	2	4	0	0	1	1	2	0	0
Germany	137	144	148	127	81	102	127	150	140	136	110	50
Greece	4	8	12	1	0	7	8	10	5	11	0	0
Iceland	4	4	5	4	4	4	4	4	4	3	1	0
Ireland	35	46	48	56	55	50	53	43	39	39	20	0
Israel	6	4	3	4	1	1	2	1	0	0	0	0
Italy	14	4	15	18	8	4	2	8	12	17	6	1
Latvia	11	13	15	15	5	2	4	9	6	3	3	0
Lithuania	4	4	4	4	3	8	0	2	15	19	2	0
Netherlands	8	8	11	7	13	24	22	12	16	8	9	4
Norway	45	58	43	57	68	58	59	64	63	74	64	40
Poland	0	4	6	3	6	9	5	11	6	7	6	4
Portugal	0	0	1	1	0	1	1	0	13	5	5	0
Romania	5	8	9	11	5	5	4	3	2	3	0	0
Russian												
Federation	14	3	0	0	3	4	5	0	0	0	0	0
Slovenia	0	13	64	25	34	34	34	34	36	33	0	0
Spain	29	41	37	54	48	55	55	52	73	76	67	1
Sweden	40	62	44	44	59	66	56	54	42	34	35	24
Tunisia	5	20	2	3	2	0	0	0	0	0	0	0
Turkey	10	5	8	14	26	27	30	5	28	24	0	0
Ukraine	1	1	7	3	5	0	0	0	0	0	0	0
United			_	_			_					
Kingdom	196	185	263	636	705	796	210	84	72	6	16	4
TOTALS	843	958	1061	1462	1502	1703	1091	886	900	801	653	133
· O IALO	0-13	550	T001		1302	-,05	1031	550	300	201	555	100

Table: Number of Cruise Summary Reports per country per year

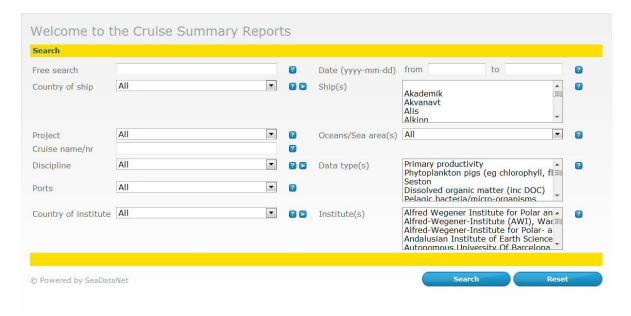
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#### Cruise Summary Reports database -User Interface







Cruise Summary Reports database -Result of search for all CSR entries

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				Refine query   New query   Results   Found 3851   Show 1   Previous   New		
Details of 2011209 (BSH2	0113211)					
General Information						
Platform/Ship	Johan Hjo	rt				
Cruise name	2011209					
Cruise begin	2011-06-16					
Cruise end	2011-06-	21				
Port of departure	Bodø					
Port of return	Bergen					
Chief Scientist(s)	Dr. Erling Kaare Stenevik - Institute of Marine Research					
Responsible Laboratory	Institute of Marine Research					
Country	Norway					
Location						
General Ocean Areas	Norwegia	n Sea				
Marsden squares (S,N,E,W)	251 (60.0 252 (60.0	, 70.0, 10.0 , 70.0, 0.0,				
Bounding Box(es)	South	West	North	East		
	60	0	70	10		
	60	10	70	20		
Specific Geographic Areas	Norwegia	n shelf				
Objectives						
Description	Study the abundance and distribution of postlarval Norwegian spring spawning herring and their predators on the Norwgian shelf and in selected fjords.					
Additional information						
Parameters measured	Ammonia CTD station Eggs and Nitrate Nitrite Pelagic fis Phosphat Phytoplar	ons larvae sh e		nisms. II, fluorescence)		

Cruise Summary Reports database - Details of a selected CSR entry

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#### 5. Population, maintenance and usage of the Research Vessels database

The European Research Vessel InfoBase, launched in 2006, is managed by EurOcean and contains characteristics of each research vessel (RV), owner/operator contact details and, if available, a link to the ship's web page. For EUROFLEETS a dedicated version of the European Research Vessels InfoBase has been developed by EurOcean at <a href="http://www.eurofleets.eu/rvs/">http://www.eurofleets.eu/rvs/</a>.

The EUROFLEETS European Vessel Database module of the European Virtual RV Platform was launched by EurOcean on March 5<sup>th</sup> 2010. Currently it contains information on: 306 Operating Research Vessels and 63 Out of Service, larger than 10 meters (from the coastal to high seas). Additionally the Database provides information of owner/operator contact details and, if available, a link to the ship's web page. The available information can be accessed by using a set of drop-down menus (Vessel Name; Vessel Category; Country; Length; Main Activity and Availability for charter) as well as, through a dedicated query link by using a research vessel ICES Shipcode.

The European Research Vessel InfoBase is regularly updated by the RV operators/owners either by a dedicated request addressed to the EurOcean Office, or by direct update by filling-in an electronic form available through the homepage (<a href="http://www.rvinfobase.eurocean.org/">http://www.rvinfobase.eurocean.org/</a>). All requested updates are however only made public after validation by EurOcean Team, the InfoBase manager and master editor.

Even though the InfoBase is continuously updated, EurOcean releases an annual update request to all the RV operators/owners as to guarantee the relevance of the InfoBase information. As a result of the undertaken activities, 181 RV operators/owners, including the planned/under construction RV's (not available in the EUROFLEETS European Vessel Database) were last contacted on June 4th 2016, which turned in information updates of 5 of the 22 EUROFLEETS vessels (circa 22.7%), and 26 of the 306 remaining Infobase RV's (circa 8,4%), as showed in the Table below.

Update Status	EUROFLEETS RV's	Remaining Infobase RV's		
	Update N.º	Update N.º		
2017	0	0		
2016	5	26		
2015	5	36		
2014	3	11		
2013	2	16		

Table: European Research Vessel InfoBase update status of the operating and out of service RV per Year for the period of the EUROFLEETS Project (2013-2017).

Due to the nature of the infrastructures, most updates are related to the contact of the vessel operator/owner and therefore, even if no update is made after the inclusion of the vessel in the InfoBase the vessel available information can be updated.

#### Usage of the EUROFLEETS Research Vessel database

For the given date the InfoBase registered a total of 2243 Visits, since the beginning of the project. In the chart below it is possible to establish a correlation between the visits picks and the launch of EUROFLEETS calls and the update request.



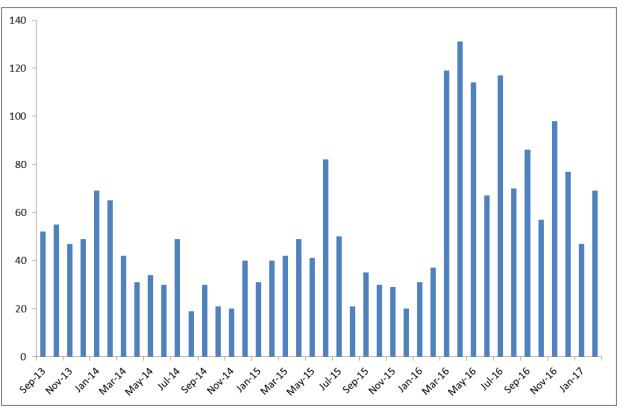
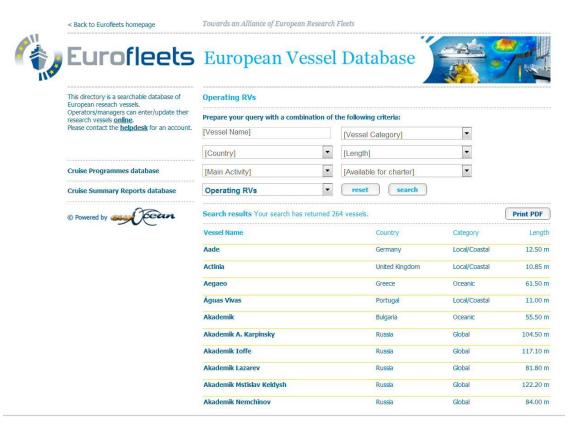


Figure: Monthly evolution of the unique page views of the EUROFLEETS European Vessel Database Module

Reference: EUROFLEETS2-WP4-D4.43-22032017-V1.doc Security: Public

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#### Research Vessel database –User Interface for searching Research Vessels



Research Vessel database - Details of a Research Vessel

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## 6. Population, maintenance and usage of the European Large Exchangeable Instruments database

The European Large Exchangeable Instruments, launched in November 24<sup>th</sup> 2011, is managed by EurOcean and contains characteristics of twenty seven categories of instruments, included in the previous EurOcean\_LEXI – Large Exchangeable Instruments InfoBase and the EurOcean\_UV - European Underwater Vehicles InfoBase. For EUROFLEETS a dedicated version of the European Large Exchangeable Instruments InfoBase has been made operational by EurOcean at <a href="http://www.eurofleets.eu/lexi/">http://www.eurofleets.eu/lexi/</a>.

The EUROFLEETS European Large Exchangeable Instruments Database module of the European Virtual RV Platform, launched by EurOcean, was integrated in the European Virtual RV Platform on March 18<sup>th</sup> 2012. Presently it contains information on 149 (instruments as well as information of owner/operator contact details and, if available, a technical details document. The available information can be accessed by using a number of pull-down menus (Free Text; Type of Instrument; Country and Depth Range).

Similarly to the RV's InfoBase, the LEXI InfoBase it is regularly updated by the instrument operators/owners either by a dedicated request addressed to the EurOcean Office or, by direct update by filling-in an electronic form available through the InfoBase homepage (<a href="http://www.lexiinfobase.eurocean.org/insert\_uv.jsp?new=t">http://www.lexiinfobase.eurocean.org/insert\_uv.jsp?new=t</a>). All requested updates are however only made public after acceptance by EurOcean Office, the InfoBase manager and master editor.

Even though the InfoBase is continuously updated, EurOcean releases an annual update request to all the instrument operators/owners as to guarantee the relevance of the InfoBase information. As a result of the undertaken activities, 75 operators/owners were contacted on June 4<sup>th</sup> 2016, which translated in information updates 10 of the 149 instruments (circa 6,7%).

#### Usage of the EUROFLEETS Large Exchangeable Instruments database

The EUROFLEETS Large Exchangeable Instruments database registered, for the given period, 1621 in the chart below it is possible to visualise the monthly evolution of the InfoBase.

Reference: EUROFLEETS2-WP4-D4.43-22032017-V1.doc

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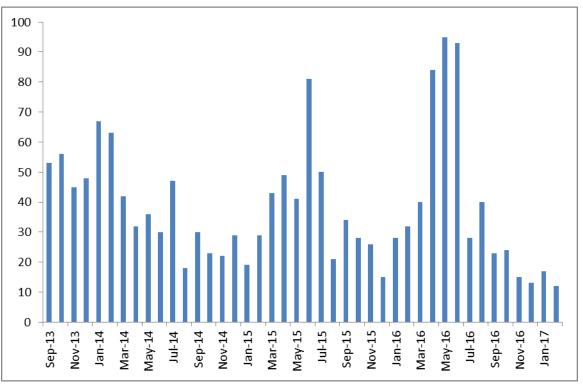


Figure: Monthly evolution of the unique page views of the EUROFLEETS Large Exchangeable Instruments Module



European Large Exchangeable Instruments Database –User Interface for searching Large Exchangeable Instruments





European Large Exchangeable Instruments Database–Details of a Large Exchangeable Instrument

#### 7. Conclusions and Recommendations

It can be concluded that the 4 databases are well maintained on a European scale as there is a regular population of database records by a wide number of countries. The operation of these modules has been continued from the previous EUROFLEETS project and its maintenance has been well established as part of the EUROFLEETS 2 project. The overall EUROFLEETS website has been revised recently and this gives a more prominent position for the EVIOR platform which leads to increasing number of visitors. Overall the Cruise Programmes as considered as very useful for planning purposes, such as supporting deployments of ARGO floats, while at the same time there is still quite some delay in getting the planning info from the RV operators. The Cruise Summary Reports are instrumental for data centres to follow up scientists and their data sets collected during cruises. As part of POGO and also the Ocean Data Interoperability Platform project (ODIP) the CSR is now also increasingly populated by USA through cooperation with the R2R project and Australia. It is recommended to continue the EVIOR activities, also as part of a possible EUROFLEETS 3 project as it gives direct insight in the actual cruises as undertaken by the European Research Vessel fleet and also provides very relevant information about the characteristics of the research vessels and large exchangeable equipment.

Reference: EUROFLEETS2-WP4-D4.43-22032017-V1.doc

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