

EUROFLEETS legacy

Interest for ERVO

(Valérie Mazauric, EUROFLEETS2 Coordinator)



19th ERVO meeting, June 12-14, 2017

EUROFLEETS2 (2013-2017): context and objectives

- The enhancement of the FP7 EU project EUROFLEETS (2009-2013)
- A consortium of 31 partners from 20 countries
- A project structured in 3 activities: Trans National Access (TNA), Networking (NA) and Joint Research (JRA), to:
 - ✓ Offer access to a group of Research Vessels and mobile equipment on basis of scientific excellence
 - ✓ Foster interoperability between European research fleets
 - ✓ Collaborate on technological developments
 - ✓ Train the next generation of marine researchers
 - ✓ Develop strategic perspectives and schemes for better coordinated European Research fleets, including the **polar component**
- An expected follow-up with the EUROFLEETS+ proposal to be submitted to the H2020 INFRAIA 2018-2019 call



A significant group of ship operators providing access to 22 Research Vessels and equipment

8 Global/Ocean RVS




 OGS-Explora




 Marion Dufresne




 L'Atalante




 Hespérides



 Celtic Explorer



 Polarstern




 G.O Sars




 Sarmiento de Gamboa





 Sanna

 Magnus Heinason

West Coast of Greenland


Norwegian Sea


North-East Atlantic

North Sea


Baltic Sea



 Simon Stevin

 Salme




 Belgica


 Celtic Voyager

Bay of Biscay

Western Mediterranean Sea




 Ramon Margalef

 Angeles Alvarino



 Minerva Uno


 Bios-Dva


 Aegaeo

Mediterranean Sea



 Marmara

 Mare Nigrum

 Akademik

Mediterranean Sea and Black Sea

14 Regional RVs covering a wide sector

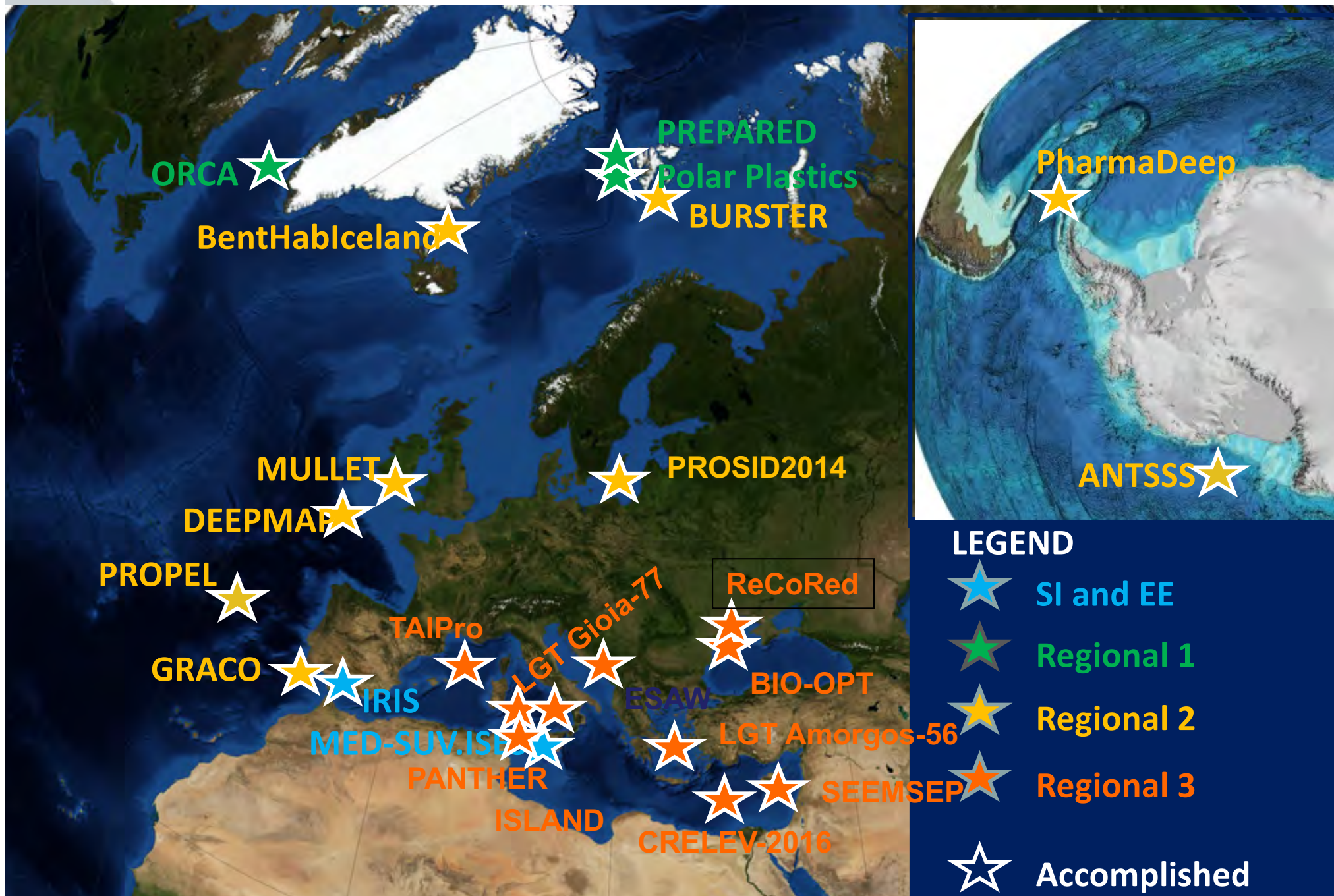
- GINR: *Sanna*
- Havstovan: *Magnus Heinason*
- VLIZ: *Simon Stevin*
- TUT: *Salme*
- RBINS: *Belgica*
- MI: *Celtic Voyager*
- IEO: *Angeles Alvarino & Ramon Margalef*
- CNR: *Minerva Uno*
- IOF : *Bios-DVA*
- HCMR: *Aegaeo* and the Max Rover ROV
- Tubitak: *Tubitak Marmara*
- IO-BAS: *Akademic*
- GeoEcoMar: *Mare Nigrum*

The TNA activity, in summary

- **4 ship-time calls** and **1 equipment-time call**
- **50 submitted proposals with multi-national groups from more than 180 institutions, from 39 countries**
- In total, **24 scientific projects** on board 17 RVs, representing more than 200 days of ship-time and 25 days of equipment-time
- **6 main geographic areas:** Sub-arctic (5), Antarctic (2), Baltic Sea (1), Atlantic (4), Med. Sea (10) and Black sea (2)
- Access requested to carry out projects in a **wide range of scientific disciplines**



EUROFLEETS2 Funded Cruises

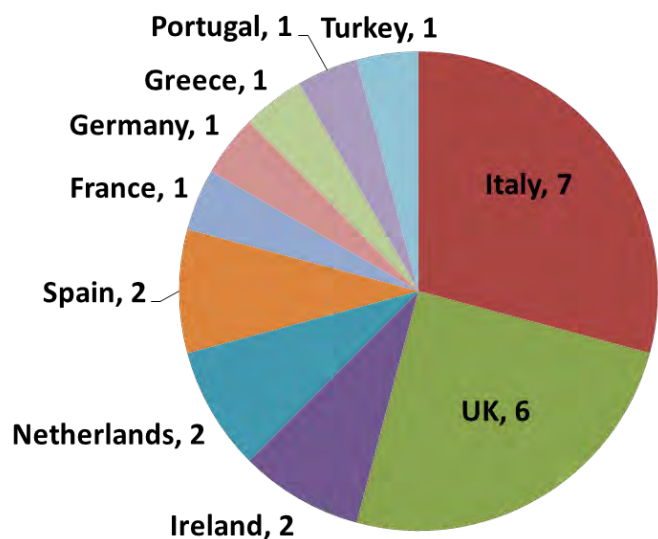


LEGEND

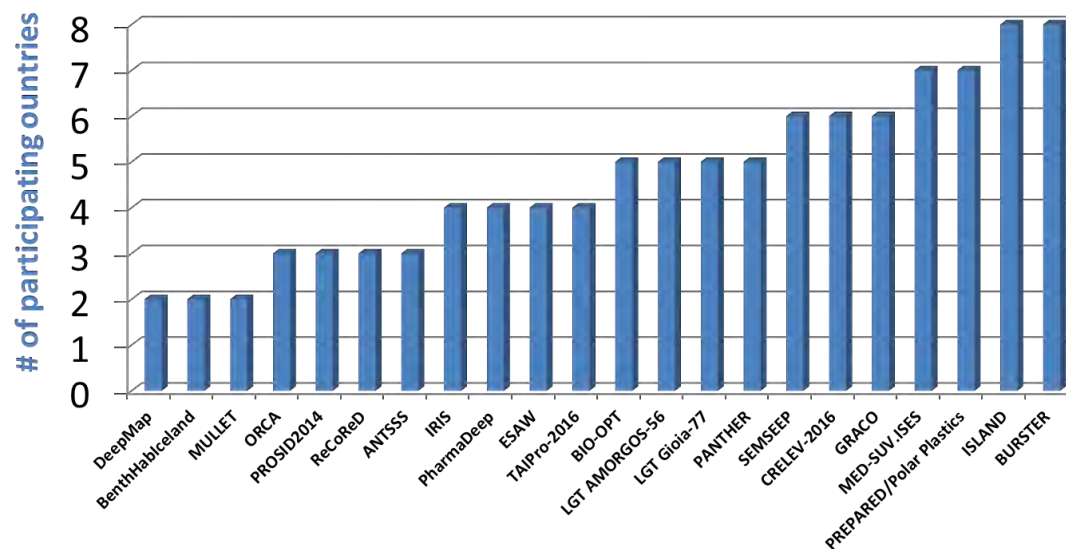
- ★ SI and EE
- ★ Regional 1
- ★ Regional 2
- ★ Regional 3
- ★ Accomplished

Granted cruises

PIs' nationalities

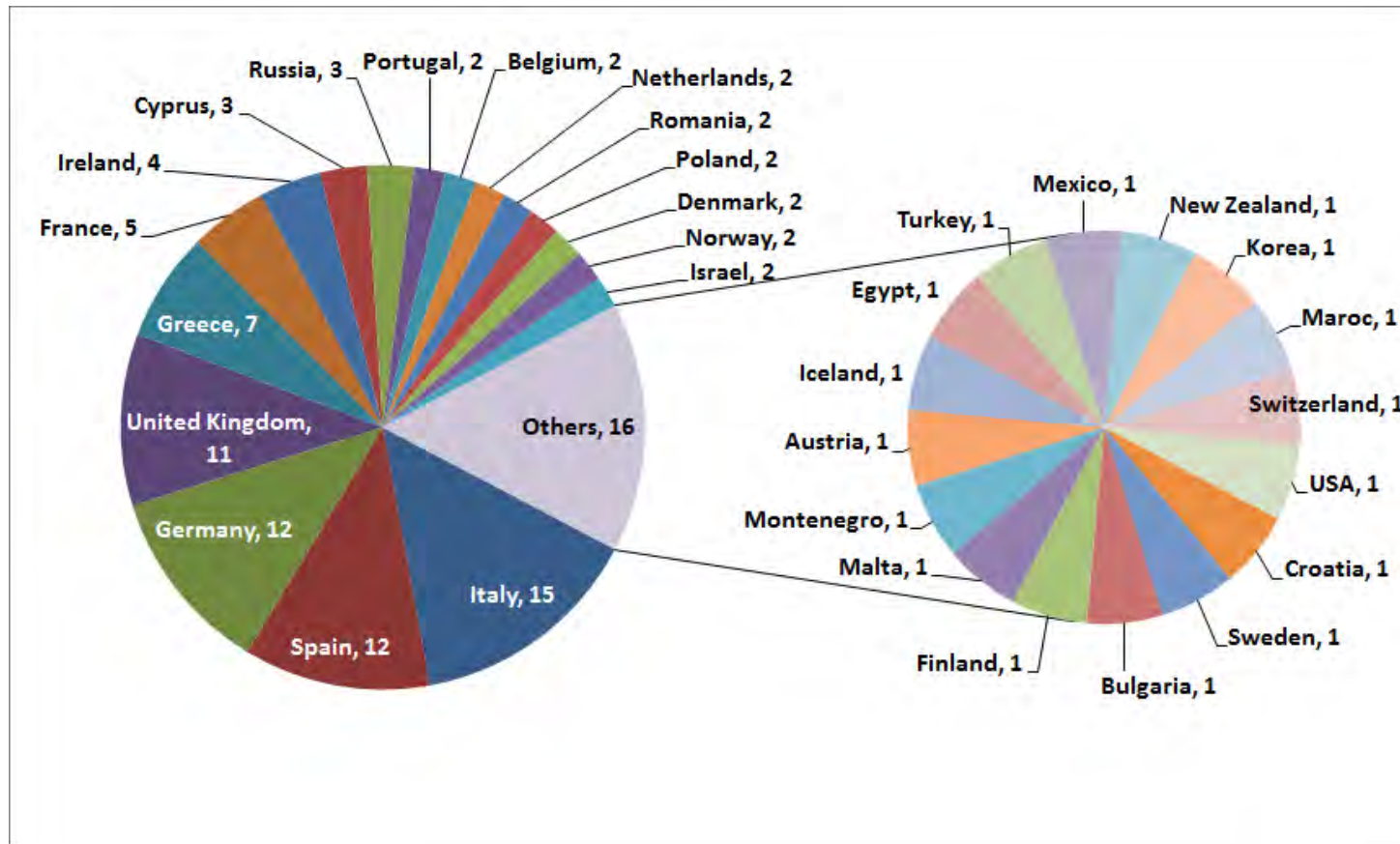


Partnerships of 2-8 countries per proposal



TNA: a highly collaborative activity

Number of countries' participation to granted cruises



On-going preparation of the EUROFLEETS legacy

- Legacy report under drafting with EUROFLEETS results and outcomes described in themes and sub-themes. For each sub-theme, a summary of main outcomes and the list of linked Deliverables
- Many of the reports are restricted to the project's Consortium
- Need to identify which thematics/reports ERVO is willing to use, maintain and further expand?
- **Proposed approach:** EUROFLEETS legacy report ready to be transmitted to ERVO ExComm in August so that ERVO can determine what are the reports of interest.



EUROFLEETS legacy: 7 main themes

- Actions towards an improved knowledge and enhanced collaboration of European Research fleets
- **Follow-up of the status of European Research fleets** (with operating areas, main activities, technical capacities ...)
- The 2016/2016 survey mapping Global, Ocean, Regional RVs and Coastal RVs, operated in 5 main European maritime areas (“Arctic Ocean”, “Channel, Skagerrak and North Sea”, “North West Atlantic”, “Baltic sea”, and “Med. Sea, including Black sea”) and in other oceans.

		1960	1970	1980	1990	2000	2010	2020	2030	Y.B	Age	Class	Institutional operator	Length (m)	Scientists + technicians	European regional areas					
											Area 1 : Arctic Ocean incl. Norwegian Sea	Area 2 : Channel skagerrak and North Sea	Area 3 : North East Atlantic	Area 4 : Baltic Sea	Area 5 : Med sea (including Black Sea)						
BELGIUM	Belgica			Belgica			2020			1984	33	R	RBINS	50,9	12 - 16		1	1			
	Simon Stevin							Simon Stevin		2012	5	C	VLIZ	36	10		1				
BULGARIA	Akademik				Akademik					1979	38	R	IO-BAS	55,5	22					1	
CROATIA	Bios Dva					Bios DVA				2009	8	C	IOF	36,6	18					1	
	Palagruza			Palagruza						1975	42	R	HIRC	45,5	40					1	
	Hidra				Hidra					1994	23	C	HIRC	22,1	6					1	
DENMARK	Aurora						Aurora			2014	3	C	Aarhus Univ.	28	14		1			1	
	Dana			Dana						1981	36	O	DTU aqua	78,43	10	1	1	1	1	1	
ESTONIA	Salme			Salme						1974	43	CR	TUT	31,3	12					1	
FAROE ISLANDS	Magnus Heinason				Magnus Heinason		2019 New Magnus Heinason			1978	39	R	FAMRI	44,5		1					
FINLAND	Aranda				Aranda					1989	28	O	SYKE	59,2	27	1				1	
France	Alis			Alis						1987	30	CR	IRD	28,4	6						
	Antea				Antea					1995	22	R	IRD	34,95	10		1	1		1	
	Beautemps-Beaupré				Beautemps-Beaupré					2002	15	O	French Navy	80,64	25		1	1		1	
	Côtes de la Manche				Côtes de la Manche					1997	20	C	CNRS	24,9	8		1	1			
	L'Astrolabe				L'Astrolabe		2018 New L'Astrolabe			1986	31	O	IPEV	65	50						
	L'Atalante				L'Atalante					1990	27	G	Ifremer	84,6	29	1	1	1		1	
	L'Europe				L'Europe					1993	24	R	Ifremer	29,6	8						1



EUROFLEETS legacy: 7 main themes

- Actions towards an improved knowledge and enhanced collaboration of European Research fleets
 - **Flagship initiative on Polar Research Fleets** (available capacities, scientific demand, recommendations for a strategic vision)
 - **Contribution to enhanced interoperability** within European Research Fleets
 - with procedures & protocols for deploying (23) LEXIs,
 - with nearly 900 individual interoperability assessments for LEXIs across (39) European Global&Ocean RVs
 - **Definition of common interface specification** to facilitate interoperability with new platforms and between sensors and payloads

RV	LEXI 1	LEXI 2	LEXI 3	LEXI 4	LEXI 5	LEXI 6	LEXI 7	LEXI 8	LEXI 9	LEXI 10	LEXI 11	LEXI 12	LEXI 13	LEXI 14	LEXI 15	LEXI 16	LEXI 17	LEXI 18	LEXI 19	LEXI 20	LEXI 21	LEXI 22	LEXI 23
RV1	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV2	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV4	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV5	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV6	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV7	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV8	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV9	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV10	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV11	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV12	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV13	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV14	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV15	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV16	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV17	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV18	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV19	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV20	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV21	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV22	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV23	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV24	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV25	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV26	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV27	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV28	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV29	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV30	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV31	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV32	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV33	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV34	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV35	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV36	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV37	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV38	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
RV39	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green



EUROFLEETS legacy: 7 main themes

- Actions towards an improved knowledge and enhanced collaboration of European Research fleets
- **Management procedures of European RVs**, with guidelines for harmonization
- **Schemes for further cooperation and coordination** between European Research fleets
- **The EVIOR platform** (<http://eurofleet.maris2.nl/startpage.html>)

- Access to the RV and LEXI infobases
- Access to the Cruise Programme DB (POGO)
- RV tracking and event logging modules

Select research vessel

- Sarmiento de Gamboa
- Hesperides

Select Track

2015-08-23T00:00:52 (4700)

Track info

Date	Speed	Bearing
2015-08-23T00:00:52	9.97	229.3
2015-08-23T00:01:53	9.98	229.1
2015-08-23T00:02:54	9.99	229.1
2015-08-23T00:03:55	9.96	229.0
2015-08-23T00:04:56	9.98	229.2
2015-08-23T00:05:57	9.97	229.2
2015-08-23T00:06:58	9.95	229.3
2015-08-23T00:07:59	9.99	229.2
2015-08-23T00:09:00	10.02	229.1
2015-08-23T00:10:01	9.98	229.5
2015-08-23T00:11:02	10.02	228.9
2015-08-23T00:12:03	10.05	229.0
2015-08-23T00:13:04	10.01	229.0
2015-08-23T00:14:05	10.01	229.5
2015-08-23T00:15:06	9.99	229.0
2015-08-23T00:16:07	9.96	228.0
2015-08-23T00:17:08	10.0	228.1

Dynamic Vessel Tracking & Events System - PROTOY

Vessel Details

Description	Values
main_code	1
vessel_name	Sarmiento de Gamboa
vessel_c174	SDN:C174:124:29AH Vessel details

[Full details ship summary report](#)

Events During Track

Date	ID	Description
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EUROFLEETS legacy: 7 main themes

- Training & Education activities
- Access to RVs & equipment
 - The **EUROFLEETS Evaluation System** and recommendations for future calls
 - TNA: call definition and proposal selection
- Joint technological research on Research Vessel design
 - A set of **guidelines and recommendations** (“Ship greening”, “Noise and vibration reduction”, “Bubble sweep down avoidance”, “Work deck installations”, “Innovative technologies for optimization of existing ships”)
 - **2 generic designs**: the RRV50 and the BRV35



EUROFLEETS legacy: 7 main themes

- Joint technological research on Underwater System technologies
 - Payloads (3D high resolution cameras, BioGeoChemical, In situ Chemical Analysis and Sampling Payload etc...)
 - 3D reconstruction methodologies and algorithms
 - Control of vehicle positioning
 - Embarked energy (development of battery prototypes)
- Joint technological research on software and tools
 - **A range of software tools:** i) onboard tools: EARS, Data acquisition system, Web Services, ii) for Underwater Systems: the Common Mission Programming Tool, iii) for data post-processing: GLOBE, ...
- Link with industry of EUROFLEETS2 Joint Research Activity (JRA) topics





Photos courtesy of Renata Lucchi (OGS)



Photos courtesy of Amy Lusher (MRFC, IE)



Thank you for your attention



Photos courtesy of Laura de Steur (NIOZ)



Photos courtesy of MED-SUV.ISES Team