GRANT N°: 871153
PROJECT ACRONYME : JERICO-S3
PROJECT NAME : Joint European Research Infrastructure for Coastal Observatories - Science, services, sustainability
COORDINATOR : Laurent DELAUNEY - Ifremer, France - jerico-s3@ifremer.fr

JERICO-S3 MILESTONE

Joint European Research Infrastructure network for Coastal Observatory
Science, Services, Sustainability

MS#, WP# and full title	**JERICO-S3 MS12** - WP3 - "WP3 Session in ARW#1 including individual IRS breakout sessions #1"
5 Key words	All Regions Workshop - IRS
Lead beneficiary	NIVA
Lead Author	Andrew King
Co-authors	Laurent Delauney, Bastien Tagliana
Contributors	All IRS Leaders
Submission date	29/02/2020

→ **Please specify the type of milestone:**

- ❏ Report after a workshop or a meeting (TEMPLATE A)
- ❏ Report after a specific action (TEMPLATE B) (test, diagnostic, implementation,…)
- ❏ Document (TEMPLATE B) (guidelines,...)
- ❏ Other (TEMPLATE B) (to specify) …….

Diffusion list			
Consortium beneficiaries	Third parties	Associated Partners	other
X			

PROPRIETARY RIGHTS STATEMENT

Report after a workshop or a meeting

1. Attendees

75 participants (**cf. Annex 1)**

2. Statement of Decisions

For this first IRS breakout session presented during the first All Region Workshop (ARW#1), no decision has been taken, because the main objective at this stage was to have a proper presentation of the IRS characteristics to start the project.
Therefore the sessions consisted in a global presentation of the IRS by the leaders followed by discussion and questions, which, at this stage, did not require decisions.

3. Main report

cf. Annexe 2 + 3.

In the framework of the ARW#1 held during the JERICO-S3 Kick-Off meeting on the 19 February 2020 in San Sebastian, Spain, the IRS leaders proposed an exhaustive presentation of their IRS, composed of the following points **(cf. Annexe 3)**:

1- Science in the IRS
   a) Specific Scientific topics and objectives
   b) Specific Observational Challenges in the region, where pilot supersite (PSS) is expected to provide progress
   c) Societal and Economic Expected impacts

2- Observation Systems in IRS
   a) Operation observation systems & platforms in the region
   b) Roadmap to help the IRS mature regarding this system

3- Data services & Products in IRS
   a) Where is the system referenced ? (Which catalogue)
   b) What is the related european data aggregator?

4- Users in IRS

5- Conclusion

The presentation was followed by questions and discussions **(cf Annexe 2)**.

4. Conclusions

The IRS session enabled the JERICO-S3 consortium to reach a higher understanding of the state of the art in each 5 IRS Region at the beginning of the project and thus identify the main challenges and objectives to be addressed within the JS3 project.

5. Annexes and references

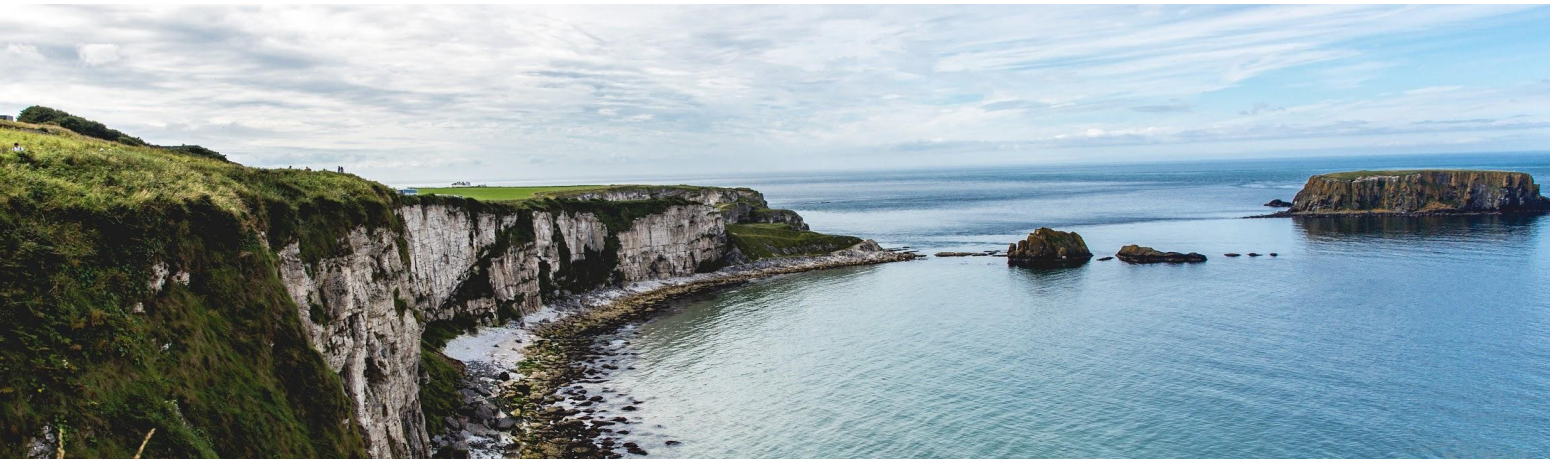
5.1 Annexe 1: Attendees

JERICO-S3 KICK-OFF MEETING Feb. 17-21 2020 - WED. 19/02

	LAST NAME	First name	INSTITUTE	SIGNATURE
1	ALBA	Marco	ETT S.p.A.	
2	ALLEN	John	SOCIB	
3	ARTIGAS	Luis Felipe	CNRS LOG - ULCO	
4	AUTERMANN	Christian	52°North	
5	BERNARD	Guillaume	CNRS (EPOC)	
6	BERRY (WP11-TNA)	Alan	MI	
7	BERTA	Maristella	CNR-ISMAR	
8	BLANDIN	Jérôme	Ifremer	
9	BLAUW	Anouk	Deltares	
10	BOCCADORO	Catherine	NORCE	
11	BORST	Kees	RWS	
12	BOURRIN	François	CNRS - FRANCE	
13	BREVIERE	Emilie	SMHI	
14	BRUNETTI	Fabio	OGS	
15	CABALLERO	Ainhoa	AZTI	
16	CANTONI	Carolina	CNR-ISMAR	
17	CHARCOS LLORENS	Miguel	SOCIB	
18	COCQUEMPOT	Lucie	ifremer	
19	COPPOLA	Laurent	CNRS	
20	CREACH (co-WP6)	Veronique	Cefas	
21	DEBUSSCHERE	Elisabeth	VLIZ	
22	DELAUNEY (Coord.)	Laurent	Ifremer	
23	DELORY (WP7)	Eric	PLOCAN	
24	DURAND	Dominique	COVARTEC	
25	ENSERINK	Lisette	RWS	
26	FARCY (Coord.)	Patrick	IFREMER	
27	FERNÁNDEZ (co-WP8)	Juan Gabriel	SOCIB	
28	FRIGSTAD	Helene	NIVA	
29	GAUGHAN	Paul	MI	
30	GODIVEAU (Coord.)	Lea	Ifremer	
31	GREMARE (co-WP1)	Antoine	CNRS-UB	
32	HONKANEN	Martti	FMI	
33	JOHANSSON	Milla	FMI	
34	KEEBLE (co-WP10)	Simon	Blue Lobster	
35	KING (WP3)	Andrew	NIVA	
36	LAURI	Laakso	FMI	
37	LEAU	Hélène	EMSO-France	
38	LEFEBVRE	Alain	Ifremer	
39	LEGRAND	Sébastien	RBINS	
40	LIBLIK	Taavi	Taltech	
41	LIPS	Urmas	TalTech	
42	MADER (WP5)	Julien	AZTI	
43	MANGIN	Antoine	ACRI-ST	
44	MARINI (co-WP7)	Simone	CNR-ISMAR	
45	MARTINS	Inês	IH	
46	MELKONIAN	Jeanne	DT INSU, CNRS	
47	MISURALE	Francesco	ETT S.p.A.	
48	MOSTAJIR	Behzad	CNRS	
49	MOURRE	BAPTISTE	SOCIB	
50	NOLAN (co-WP9)	Glenn	EuroGOOS AISBL	
51	OLIVEIRA	Joana	IH	
52	PÉREZ GÓMEZ	Begoña	PDE	
53	PERIVOLIOTIS (co-WP6)	Leonidas	HCMR	
54	PFANNKUCHEN	Daniela	IRB	cancelled
55	PFANNKUCHEN (co-WP3)	Martin	IRB	
56	PUILLAT (Coord. + WP9)	Ingrid	Ifremer	
57	REILLY	Kieran	MI	
58	RUBIO (WP1)	Anna	AZTI	
59	SCHEPERS	Lennert	VLIZ	
60	SEPPÄLÄ (WP4)	Jukka	SYKE	
61	SIMPSON	Pauline	IODE/UNESCO	
62	SMODLAKA TANKOVIC	Mirta	IRB	
63	SØRENSEN	Kai	NIVA	
64	SOTIROPOULOU	Maria	HCMR	
65	SURENDRAN	Preethi	NORCE	
66	TAMMINEN	Timo	SYKE	
67	THIJSSE (WP6)	Peter	MARIS	
68	THYSSEN	Melilotus	CNRS	
69	TINTORE (WP[illegible]A)	Joaquin	SOCIB	
70	VILLAGARCIA	Marimar	PLOCAN	
71	VITORINO (WP10)	Joao	IH	
72	VLAD	Macovei	HZG	
73	[illegible] HENNING	WEHDE	IMR	
74	Alvarez	Jose	IH	
75	Schulz-Stellenfleth	Johannes	HZG	

5.2 Annex 2: IRS session's reports and presentations

JERICO-S3 - KICK-OFF MEETING



FEBRUARY 17 - 21 2020

JERICO-S3 KICK-OFF MEETING

REPORT and CONTENTS

of IRS Sessions

WEDNESDAY 19th Feb. 2020

(FICOBA, IRUN - BUS DEPARTS AT 8:00 in SAN SEBASTIAN (See info PDF)

All Regions Workshop

WEDNESDAY PLENARY SESSION

AUDITORIUM - 80pp

NOTES

(Authors : Collective notes)

- TABLE OF CONTENT -

REPORTS AND MINUTES - DONE

MONDAY 17th Feb. 2020 ⇒ (MINUTES PER // SESSION)

-

STEERING COMMITTEE - MONDAY ⇒ MINUTES HERE

TUESDAY 18th Feb. 2020 ⇒ REPORT HERE

NOTES (discussions)

IRS - Northern Adriatic Sea (Mirta)

Presentation given by Fabio Brunetti, OGS

Antoine G. (CNRS): Commonalities between BoB IRS and N. Adriatic, especially for extreme events, good to get in touch to collaborate and to get a parallel approach
Eric D. (PLOCAN): What is in place related to remote sensing and observations, satellite calibration?
Carolina (CNR): Data from buoy near Po river S1GB provide data for remote sensing validation via Copernicus.
Kai (NIVA): Aqua Alta is part of the validation platform.
Patrick F. (Ifremer): Need for sensor calibration/metrology is needed, Laurent will provide some follow up in other RIs? Need best practices to get the best data…
Ingrid (Ifremer, coord.): How do you connect with LTER and DANUBIUS? Need synergy, but there could be a conflict… thinking about organizing a workshop for other RI's working in the same area.
Juanga (SOCIB): All IRS/PSS should have VA and TNA? But apparently not in N. Adriatic Sea IRS? [Seems that there was a confusion between CNRS(FR) and CNR(IT).] But Felipe mentioned that flow cytometer VA toolbox can potentially connect to N. Adriatic Sea IRS.

IRS - Iberian Atlantic Margin

Joao Vitorino (IH) presenting

Peter T. (MARIS): happy to see citizen science, it would be good that some of the IRS/PSS include

some examples. The overview of the stations is what is expected to be received from the IRS
Joao V. (IH): our data is sent to CMEMS In Situ and we understood that our data are already in Sextant, if something else is needed we will be able to provide it
Henning W. (IMR) : we are integrating all data, which data are JERICO and which not? Old question
Ingrid P. (coord.): the data belongs to the original institutions, JERICO deals with harmonization and providing services. We cannot solve this completely right now. Open question: is this exclusive to use a JERICO label? No answer yet
Ingrid P. (coord) : in the scientific questions you raise extreme events and coastal erosion, any special warning system in place for these processes?
Joao V. (IH): our data and forecasts are used by research and insitutions dealing with coastal erosion problems
Ingrid P. (coord): are you collaborating with Danubius?
Joao V. (IH): IH not at this moment.
Begoña P.G. (PdE): PdE not in principle either, but PdE is the node for the IBI MFC of CMEMS and we may have a connection with them for the IBI regional model. Checking internally in PdE.

IRS - Bay of Biscay

Anna Rubio (AZTI) presenting

Begoña (PdE): Use of camera in the Rive for marine litter. Other applications?
Anna (AZTI): Most mature applications costal for monitoring seasonal changes of erosion. Also 2 systems for monitoring litter in River (including the Adour River)
Ingrid (IFREMER): Could be nice to make a demonstration in a future Regional Workshop
Antoine (CNRS): Imagery would be a good transversal topic because of the numerous multidisciplinary applications.
Joao (IH): Is there groups doing monitoring for beaches using buoys
Anna R. (AZTI): Yes there is a team in AZTI running pilot experiments in collaboration with a local company.
Antoine (CNRS): Not in France, beach monitoring only for erosion (including cameras) water quality monitoring through classical water sampling

IRS - Kattegat-Skagerrak-Eastern North Sea (notes by Vlad)

Emilie Breviere (SMHI) presenting

Eric D. (PLOCAN): Mentions of aspects related to WP7. Leads to discussions after.
Emilie B. : Agreed.

Martin P. (IRB): How feasible could it be to extend the joint system of reference images across the entire JERICO network? There is potential for a pan-European topic
Emilie B. : Need to confirm with Bengt (Karslon).
Jukka S. : The organisms are largely regional. These are very specific for the site. Maybe hard for a large scale comparison. Hard to imagine machine learning can be used for this due to limitations.
Ingrid P. : Can another consortium (cf. ask Ingrid) help with this task?
Kai S.: Laboratory analysis is needed for confirming the imaging is accurate.
Felipe A. : Automated imaging devices are one thing, but the issue of species migrating is more a problem for high resolution microscopy work. Dealing with rare species in large volumes of water is hard. Both types of catalogues are needed to really distinguish if a "new" species is real.

IRS - Norwegian Sea (notes by Helene)

Henning Wehde (IMR) presenting

Sebastien L. (RBINS): mention eDNA activities, but no mention of EMBRC (?).

Henning W. (IMR): UiB and IMR are very involved with EMBRC, so there are existing links.

Ingrid P. (coord) : another site interested in eDNA?

Felipe A. (CNRS): focus in microbial DNA in Channel PSS, not the same approach for microbes and other components.

Henning W. : need to define pan-European perspective for the various components.

Pauline Simpson (UNESCO) : A comment, first presentation to recognise UN Decade for Ocean Science for long-term perspective?

Vlad (Hzg): Skagerrak region has also mentioned this, and included in the IRS presentation.

Ingrid: we need to collaborate and have a common strategy for the UN Decade for Ocean Science. Also some relevant initiatives that has been launched. New initiative launched just a week ago.

Felipe A. (CNRS): we are fully involved with the UN Decade (OceanObs etc.). Main issue is integrated in the regional approaches.

ACTION : mention it clearly and communicate

Ingrid P. : In conclusion, aligning and mentioning the UN Decade should be mentioned and communicated more clearly. Need to promote, for all regions.

5.3 Annex 3: IRS Presentation

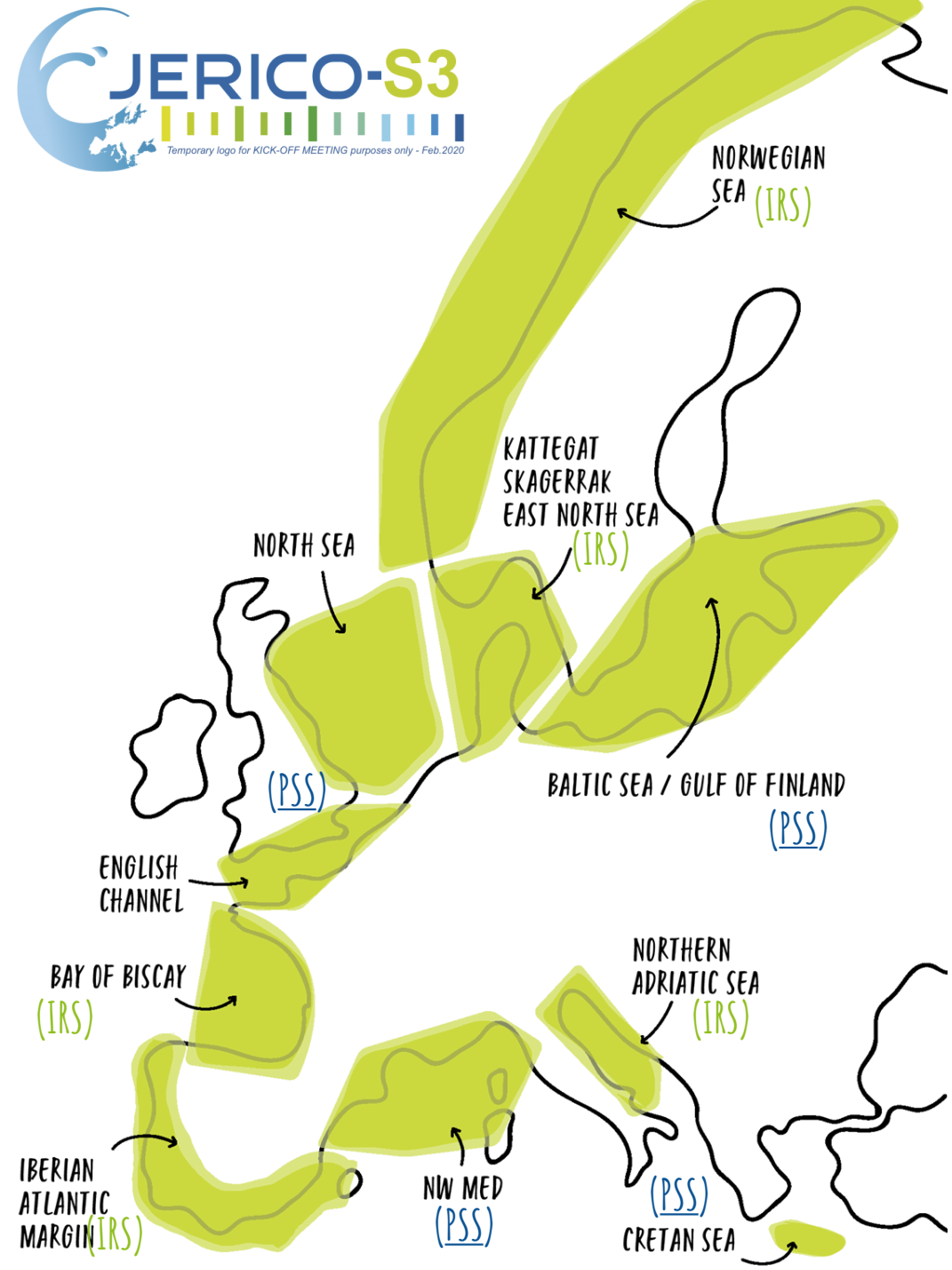
JERICO-S3

Temporary logo for KICK-OFF MEETING purposes only - Feb.2020

JERICO-S3

KICK-OFF MEETING

FEBRUARY 17 - 21 2020



ALL REGIONS WORKSHOP

Purpose of the workshop

All Regions/site together for a joint Brainstorming!

- Commonalities and Specificities
  - In Scientific approach and context
  - In Political Economical Societal context… users and stakeholders!
  - In generated data flows

- Prepare a joint scientific plan suitable to each
- Prepare a User strategy
- Prepare the business case: identify needed/existing services and products
- Anticipate/support harmonisation of data flow

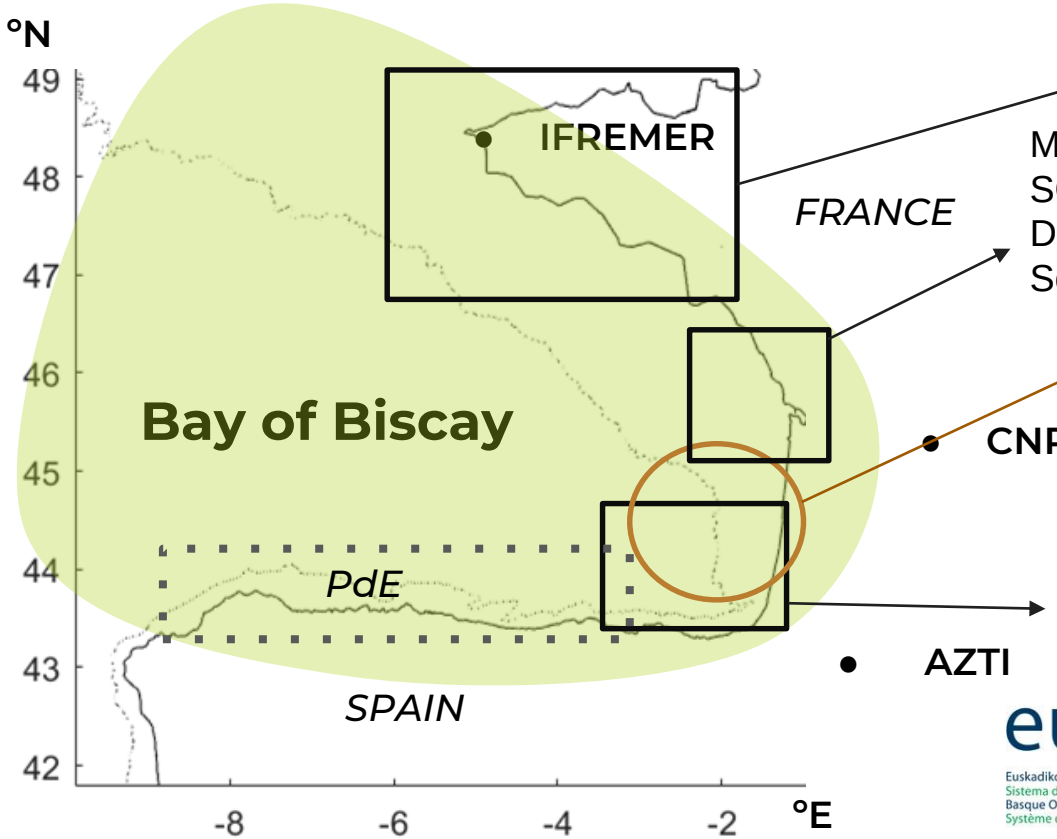
Notes taking: One slide at the end of the PSS/IRS presentation to be filled out by a region secretary

IRS - BAY OF BISCAY

IRS Contact :

INTRODUCTION - COUNTRIES AND INSTITUTES INVOLVED in the IRS

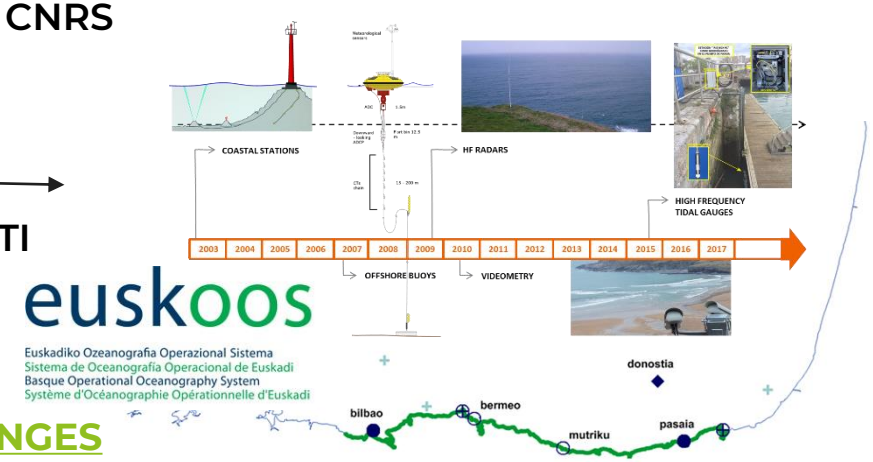
MAP OF THE REGION and REGIONAL ACTION NODES



COAST-HF Coastal moorings
PHYTOBS Phytoplankton observation
CANDHIS Waverider buoys
RECOPESCA Fishing Observing System

MAGEST Gironde monitoring network
SOMLIT (BGC: Gironde Estuary, Arcachon Bay)
DYNALIT (Beach monitoring Biscarosse, Truc Vert)
Series of projects on LSCs (Gironde, Arcachon)

New HF radar - IFREMER



SPECIFIC REGIONAL ORGANISATIONAL CHALLENGES

1- The **capitalization of existing coastal facilities & transnational & institutional collaboration & related scientific projects** for experimentation and developments in relation to scientific and societal needs

2- **Gap identification & gap-filling** in relation with central scientific and environmental questions

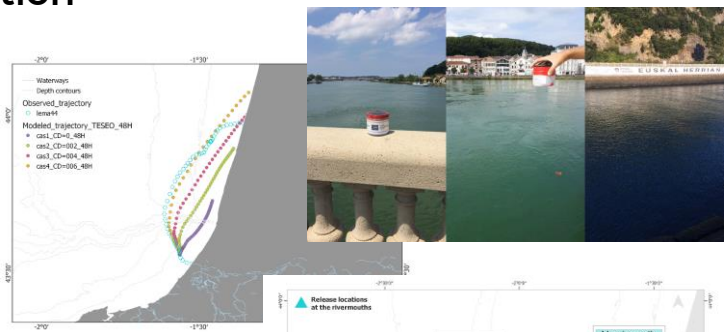
1- SCIENCE // IRS - BAY OF BISCAY

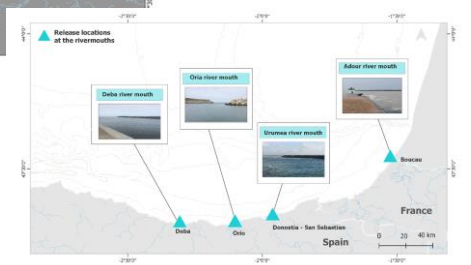
SPECIFIC SCIENTIFIC TOPICS AND OBJECTIVES (scientific case, link to WP1) in the IRS

- Response of the coastal ocean to contributions of large rivers in a highly hydrodynamic environment (West Gironde Mud Patch and SE Bay of Biscay – COCTO-FO)

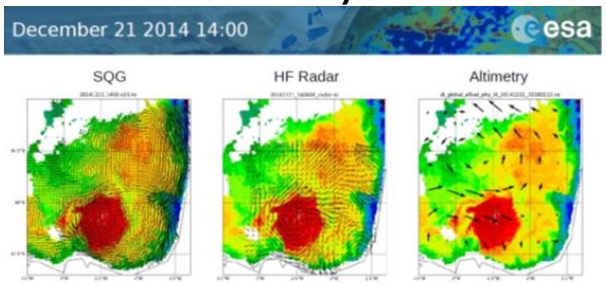
- Impact of climate change (sea level rise and extreme events) on the shore line
- Impact of global change on coastal marine habitats and water quality

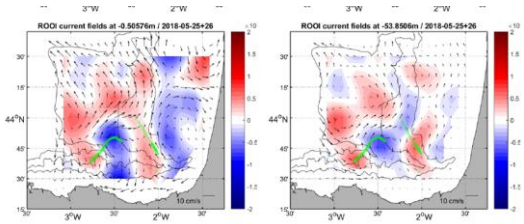
- Transport of Marine Litter and plastic pollution





- New approaches for surface coastal current retrieval from in-situ and satellite multisensor observation (coastal process observability, uncertainties, assessment & improvement of satellite products, 3D reconstruction)





→ **IF UNCLEAR OR UNKNOW, WILL BE DISCUSSED DURING THE WORKSHOP.** Please mention here what you would like to work on further.

How to enable connection between topics (bethic vs. sea surface)

Need to complete the list of scientific questions

1- SCIENCE // IRS - BAY OF BISCAY

SPECIFIC OBSERVATIONAL CHALLENGES IN THE REGION, WHERE PILOT SUPERSITE IS EXPECTED TO PROVIDE PROGRESS *+ comments*

- **Integrating multidisciplinary observations for the study of the land-sea continuum** in two study areas (in relation to the previous questions):
  - ❑ West Gironde Mud Patch
  - ❑ SE Bay of Biscay: Fate of floating riverine litter (litter data, drifters, HF radar + numerical simulations)
  - ❑ **Paving the way for expanding this approach to the whole Bay of Biscay**

- **Planning and implementation of new observations** : New HF radar, new multidisciplinar sensors…

- **Design and development (WP7) of tools for new data acquisition and integration** (coupled BGC models at the adequate spatial resolution, DA, data blending techniques, benthic station…)

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- **Need to discuss further on how to integrate the different areas and compartments**
- **Sustainability of observations (and funds for exploitation of IRS data)**

1- SCIENCE (& SOCIETY) // IRS - BAY OF BISCAY

SOCIETAL AND ECONOMIC EXPECTED IMPACTS (if known) in the IRS *+ comments*

- Biodiversity conservation, integrated ecosystem management, conservation of key habitats in the life cycle of harvested species (e.g. the common sole), application for the sustainable management of commercial species (fisheries and aquaculture)
- Water quality assessment, preservation of major economic activities (tourism, aquaculture)
- Marine Safety : SAR operation, navigation etc.
- Physical coastal Hazards, optimizing the management of induced impacts (coastline preservation, flooding risks)
- Marine litter : reduce impacts, improve continuous monitoring for evaluation of the mitigation/prevention strategies, reduce costs of mitigation strategies (active fishing for litter, on-beach litter collection)

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- Need of an action plan to complete the list
- Real links with the actors, how to engage the stakeholders (how to make the most of the limited resources for workshop organization to ensure involvement of stakeholders for tools co-design and co-creation)

2- OBSERVATION SYSTEMS // IRS - BAY OF BISCAY

OPERATIONAL OBS. SYSTEMS & PLATFORMS IN THE REGION	COMMENT ABOUT OPERATIONAL STATUS	WHY ? ROADMAP TO HELP THE IRS MATURE REGARDING THAT SYSTEM ?
Surface ocean currents from HF radar –Bas que antennas	Operational euskoos	Sustainability, new developments for integration, increase impacts & users
Slope Buoys (TS and currents from 10 to 150m)	Operational euskoos	Sustainability, new developments for integration, increase impacts & users
KOSTAsystem	Operational euskoos	Sustainability, new developments for integration, increase impacts & users
Numerical model	Operational (no DA) euskoos	Sustainability, new developments for integration, increase impacts & users
LIFE-LEMA River cameras	Operational (Oria & Adour river)	Sustainability, new developments for integration, increase impacts & users
MAGEST	Operational (Gironde & Dordogne rivers)	Sustainability, exemplify the nesting of European/national/local initiatives
SOMLIT	Operational (not in real time)	Sustainability, new developments/strategies parameters in relation with the enhancement of interdisciplinarity
COAST-HF	Operational	Sustainability, new developments for integration, increase impacts & users
DYNALIT	Operational (not all in real time)	Sustainability, new developments for integration, increase impacts & users
PHYTOBS	Operational (not in real time)	Sustainability, automatisation

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.

Please mention here what you would like to work on further

- **Strategy to aggregate other existing OO facilities (MyCOAST, French National RI – ILICO…)**
- **Need to complete the list with other observational systems (operational & monitoring)**

3- DATA SERVICES & PRODUCTS // IRS - BAY OF BISCAY

OBSERVATION SYSTEMS & PLATFORMS IN THE REGION (COPIED FROM PREVIOUS TABLE)	IS THE SYSTEM REFERENCED IN SEXTANT ? IF NOT, WHICH CATALOG ?	WHAT IS THE RELATED EUROPEAN DATA INTEGRATOR (EMODNET, SEADATANET…)?
Surface ocean currents from HF radar – Bas que antennas	YES - through CMEMS INSTAC product: INSITU_GLO_UV_NRT_OBSERVATIONS_013_048; also EDIOS	CMEMS, EMODNET
Slope Buoys (TS and currents from 10 to 150m)	YES through CMEMS INSTAC product: INSITU_IBI_NRT_OBSERVATIONS_013_033	CMEMS, EMODNET
KOSTAsystem	NO	-
Numerical model SE BoB	NO	-
LIFE-LEMA River cameras	NO	-
MAGEST	YES	¿?
SOMLIT	YES	¿?
DYNALIT	NOT ALL	¿?
PHYTOBS	YES	¿?
COAST-HF	YES	CMEMS, EMODNET

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- …

3- DATA SERVICES & PRODUCTS // IRS - BAY OF BISCAY

KEY ACTIONS FOR DATA DISTRIBUTION AND PRODUCTS, PLANNED ACTIONS FOR IRS-SPECIFIC DATA MANAGEMENT PLAN *+ comments*

- **Improved methods for harmonised data flow to IBI-ROOS.** Almost ok for physical data, work needed for biological, BGC data

- **Multisensor data integration/valorisation** (validation of models, satellite multisensor information, data blending, Lagrangian techniques); HF RADAR long-range

- **Collection and harmonisation of biological data** (Harmonisation of biodiversity data for the assessment of ecological quality status of benthic habitats)
  - Collecting observations (both within and outside JERICO-RI)
  - Develop new indicators (including those derived from sediment profile imagery)

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- **Difficulties expected depending on the nature, maturity and availability of the different data sets**

4- USERS // IRS - BAY OF BISCAY

USERS SURVEY

Maritime safety (e.g: SAR operators, coastguard, oil spill response managers, maritime emergency managers, Navy, national and local security agencies)	**Water pollution** (e.g: Local authorities; European Marine Strategy Framework Directive - MSFD)	**Offshore Energy** (e.g: energy company managers; Environmental Impact Assessments…)	**Tourism & Recreational Activities** (e.g: recreational sailing, sports sailing/regattas, surfing, diving, citizens, NGOs)	**Coastal protection** (e.g. government environmental managers, beach and coastal planners)	**Ports &Shipping** (e.g: port managers, port pilots, ferry companies/captains, shipping companies/captains, cruise companies/captains …)	**Sustainable Marine living Resources** (e.g: fisheries managers, fisheries scientists, commercial fishermen, recreational fishermen, sustainability managers; Aquaculture; HABs)	**Weather & Climate** eg: Weather Forecast Centers (data for model validation, assimilation)	**Basic and applied research in coastal oceanography** (e.g: Academia, private research organizations, ONGs)	**Other** (Please Specify)
SASEMAR (Spanish SAR operator)	URA - Basque water agency (responsibes ot the Water Framework Directive),	Biscay Marine Energy platform (Bimep)	Beachwatchers and beach managers (use of operational data from vidiometry and others);	DAEM - Directorate of Emergencies and Meteorology Basque Goverment (Basque littoral emergency managers)	Port authorities	Departamento PESCA GV	EUSKALMET - Regional weather forecast center	AZTI	
DAEM - Directorate of Emergencies and Meteorology Basque Goverment (Basque littoral emergency managers)	SUEZ Environement (Bathing water quality and services)					Matxitxako Molluscoak	CMEMS	UPV	
	Water Framework Directive + MSFD		Coastal cities authorities	OCA - Observatoire de la Côte			[…]		
French Navy							Météo-France		
Direction des Affaires Maritimes									

3- DATA SERVICES & PRODUCTS // IRS - BAY OF BISCAY

POTENTIAL NEW USERS OF DATA AND DATA PRODUCTS, EXPECTED DUE TO IRS ACTIONS

+ comments

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.

Please mention here what you would like to work on further

- **Need to complete the inventory (first version in the short term)**
- **Identify/understand the user's requirements – and what we can offer**

4- USERS // IRS - BAY OF BISCAY

LINKS TO OTHER REGIONAL ACTORS, SYSTEMS AND OTHER RIs in the IRS + comments

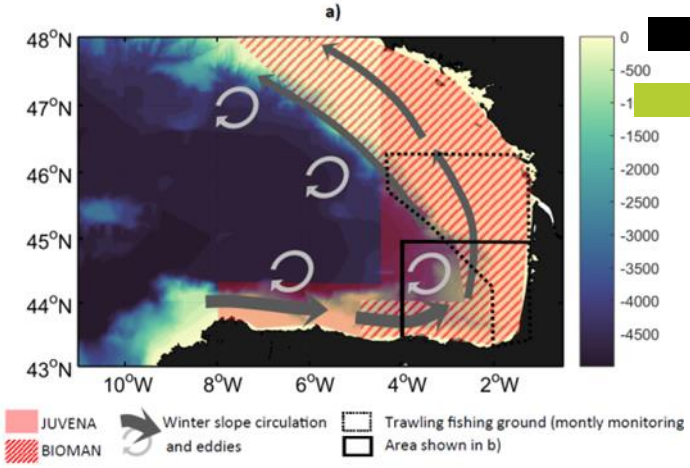
Transnational key actors in the area

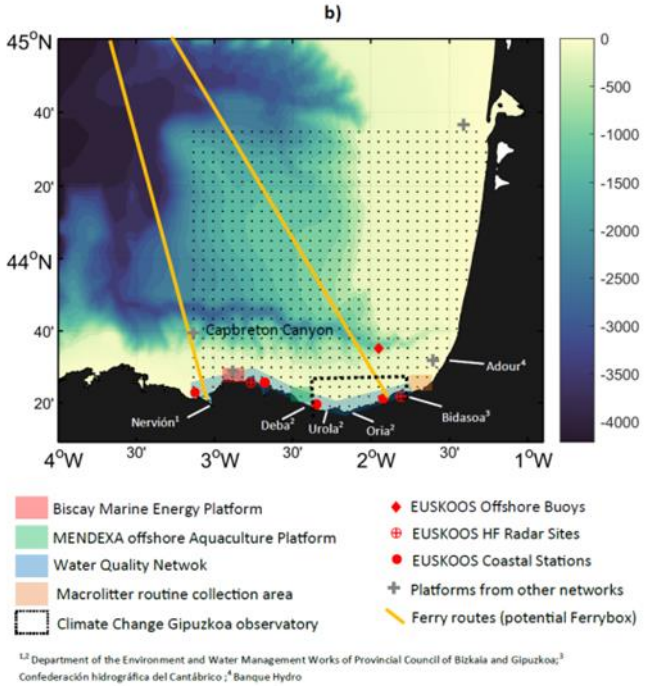
UPPA (Pau & Pays de l'Adour University)
La Rochelle University, Nantes, Angers, MNHN Concarneau,
UBO
IEO
Puertos del Estado (in JERICO but not in the IRS)
INTECTMAR (RAIA OBSERVATORY)
COAST-HF (National)
French and Spanish stakeholders and policy makers
IBI-ROOS
EO community
Danubius (no sites in the area)

DANUBIUS-RI
International Centre for Advanced Studies on River-Sea Systems

ONGOING PROJECTS:

- MyCoast
- MAGMA (Gironde)
- FORCOAST
- MARLIT
- EuroSea
- COCTO-FO





→ **IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.** Please mention here what you would like to work on further

- **ISOBAY 2020 – June in Gijon**
- **Next IBIROOS meeting – March in Santiago de Compostela**

CONCLUSION // IRS - BAY OF BISCAY

STRATEGIC EVOLUTION OF THE REGION, THE IRS ? (Scientific scope ? Enlargement of the involved parties and institutions ? New data flow to harmonise ? Etc.)

… IN 5 YEARS ? (2025, after the end of J-S3)

Connected transnational infrastructures ensuring continuous homogeneous observation of the region in its different compartments, allowing to:

- Fill identified scientific gaps
- Showcase several multidisciplinary integration applications
- Medium – long term plan for development of observations to better cover stakeholder needs
- Create transnational synergies (within and between regions) to enable sustainability

…IN 10 YEARS ? (2030)

Transnational harmonized observatory from the surface to the bottom and from land to the coastal ocean, with consolidated users

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- ¿?

ANY OTHER ISSUES IN REGION TO BE RAISED AND DISCUSSED (if relevant)

- …
- …

TA - VA // IRS - BAY OF BISCAY

1 - LIST OF TA IN THE REGION

SPI (hardware & software)
EUSKOOS Donostia Buoy
ITSASDRONE (ASV)

2 - LIST OF VA IN THE REGION

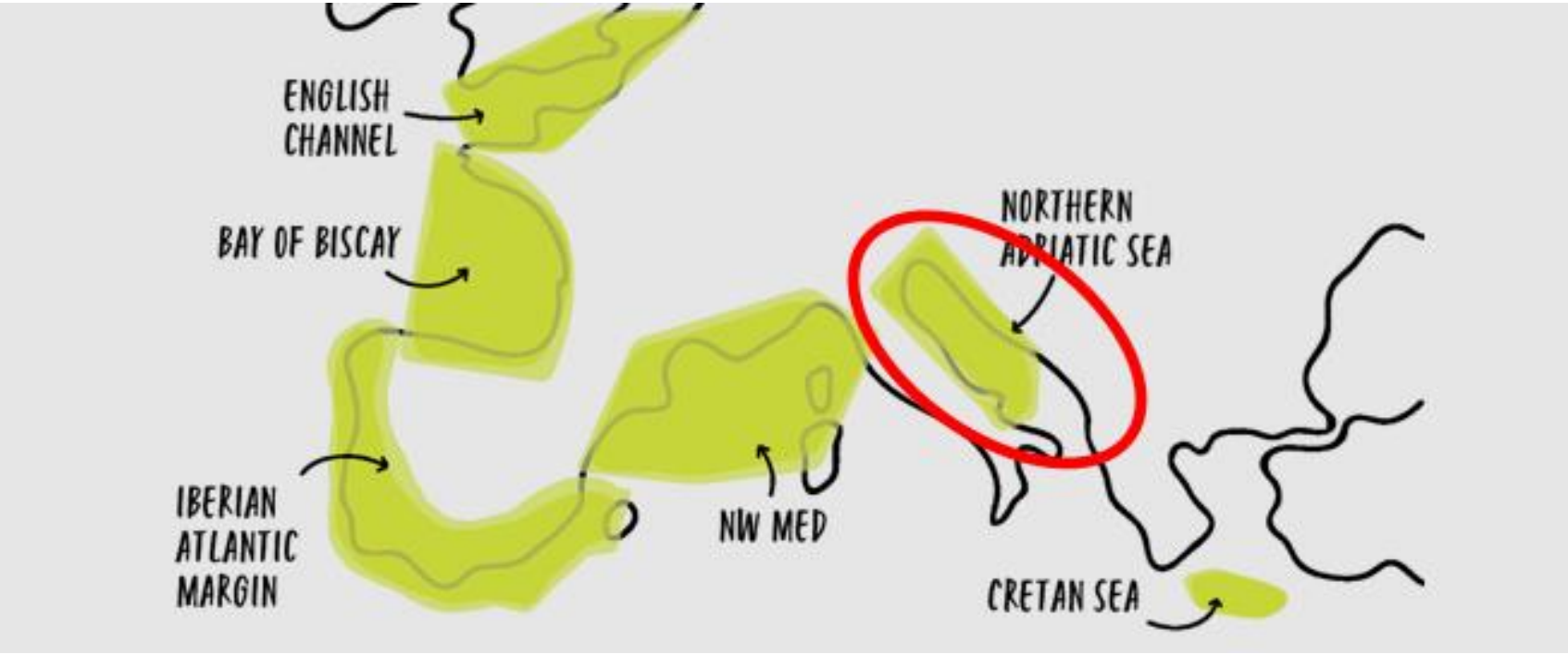
3 - ADDED VALUE OF PROVIDING AND REQUESTING TA/VA IN THE REGION ?

Added value in the sense : will we be more “attractive” for TNA users ? Promote JERICO-RI within the regions and between regions ? Specificities of the region regarding TA/VA ?

Enhancing collaboration with external actors (know how, testing new sensors)

- IRS REGION 3 -

NORTHERN ADRIATIC SEA

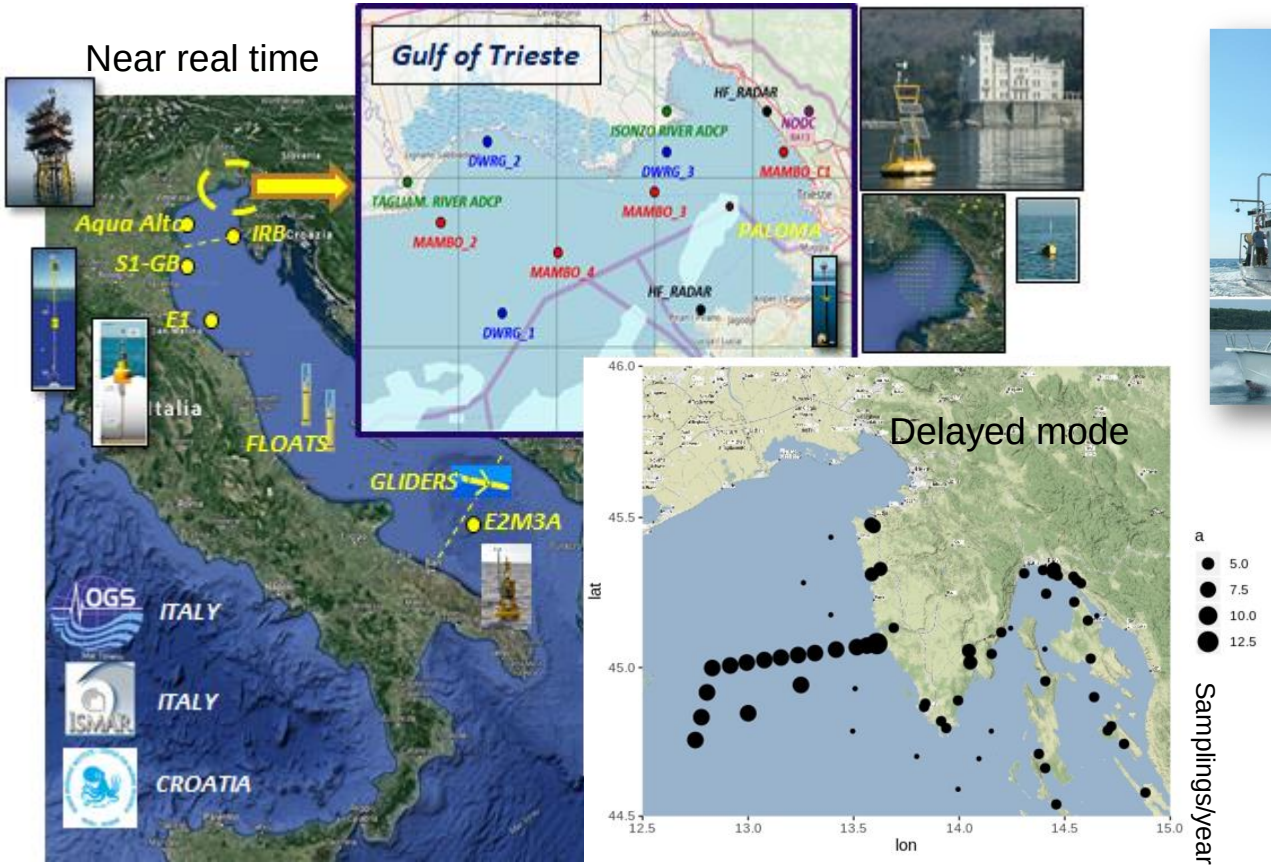


IRS - NORTHERN ADRIATIC SEA

IRS Contact: OGS: Fabio Brunetti
CNR – ISMAR: Carolina Cantoni
IRB: Martin Pfankuchen

INTRODUCTION - COUNTRIES AND INSTITUTES INVOLVED in the IRS

Near real time



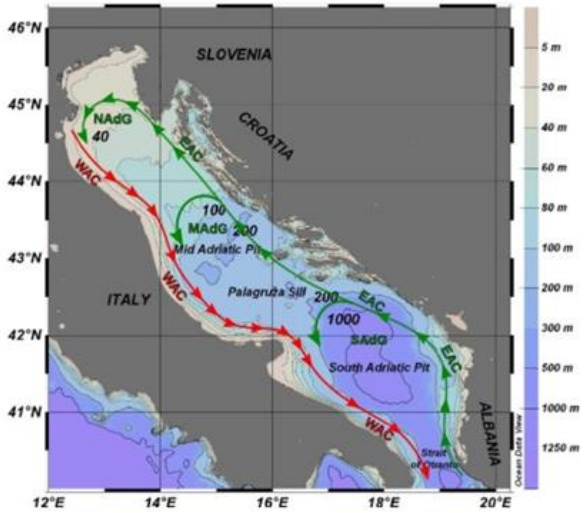
SPECIFIC REGIONAL ORGANISATIONAL CHALLENGES

- Multinational and trans-institutional infrastructure with a shared scientific and operational strategy for the region, including a common sustainability plan.
- Fill the gaps on spatial, temporal and technological inhomogeneity of the different platform.

1- SCIENCE // IRS - NORTHERN ADRIATIC SEA

The northern Adriatic Sea is a peculiar site for its:

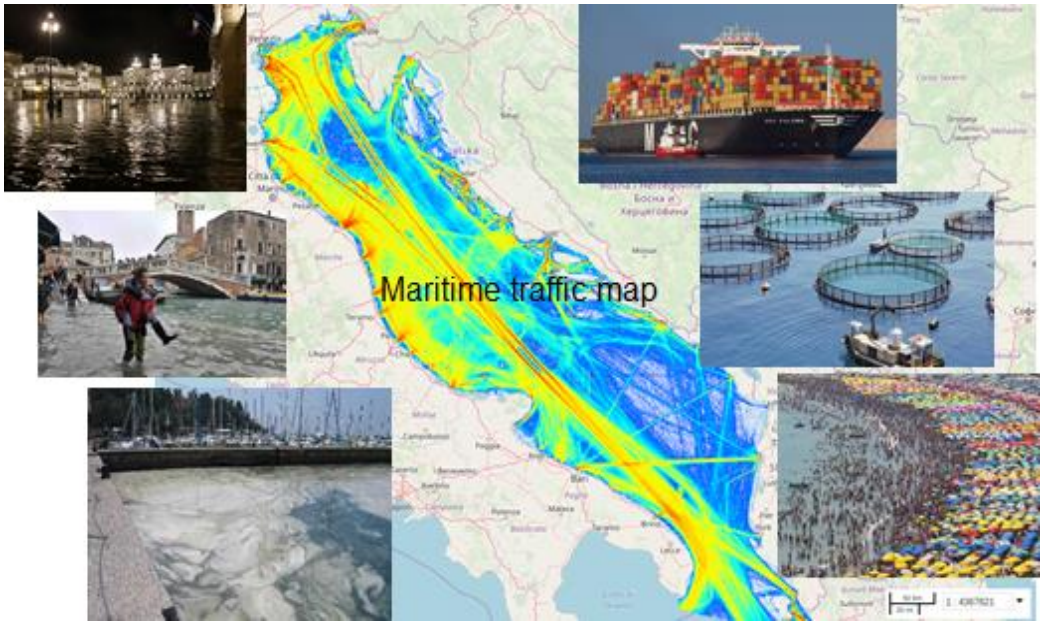
- Morphology
- Physical forcing
- Marked seasonal and interannual variability
- Biogeochemical characteristics
- Anthropogenic impacts
- Extensive observational sites



SPECIFIC SCIENTIFIC TOPICS AND OBJECTIVES (scientific case, link to WP1) in the IRS

- Understanding the development and impact of extreme events on marine dynamics and ecosystems.
- Better understanding of the coastal ecosystems and marine litter effects.
- Better knowledge of coastal/shelf physical processes.
- Coordinate operational oceanography toward the integration of synoptic and multidisciplinary observations, useful for monitoring and development of enhanced forecasting systems.
- 3D current models integrated with physical, chemical and biological oceanography
- Strong coordination with others IRS, PSS

1- SCIENCE // IRS - NORTHERN ADRIATIC SEA



Northern Adriatic sea is a fragile eco-system sensible to marine extreme event as high-tides or storms.
It is strongly influenced by anthropic pressure as: maritime traffic, fishing activities, fish farms and tourism. The contribution of pollutants from river discharges and the sea circulation influence the marine life and the trophic regime.

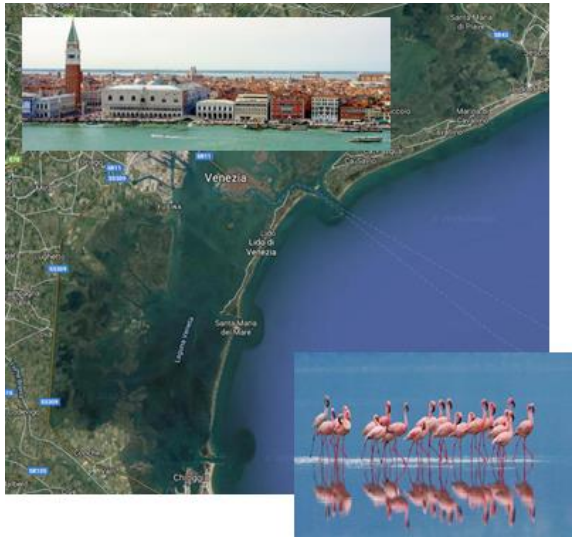
SPECIFIC OBSERVATIONAL CHALLENGES IN THE REGION, WHERE IRS IS EXPECTED TO PROVIDE PROGRESS

- Enlarge the sensors network capabilities through a better platforms integration
- Better monitor of the meteo-marine extreme events and the evolution of coastlines.
- Monitoring of the impact of climate change and acidification in coastal/shelf waters and its effects on biodiversity.
- Monitoring eutrophication and HABs effects on local ecosystems.
- Forecasting transport of pollutants and biological quantities.

1- SCIENCE (& SOCIETY) // IRS - NORTHERN ADRIATIC SEA

SOCIETAL AND ECONOMIC EXPECTED IMPACTS (if known) in the IRS *+ comments*

- Coastal safety (meteo-marine extreme events and forecasting)
- Support to fisheries, aquaculture and mariculture activities
- Sustainability of tourism and related ecosystem services
- Support to marine protected area and fragile marine ecosystem
- Port management
- Enhanced maritime operations and shipping safety
- Blue growth Maritime spatial planning MPAs management



2- OBSERVATION SYSTEMS // IRS - NORTHERN ADRIATIC SEA

OPERATIONAL OBSERVATION SYSTEMS & PLATFORMS IN THE REGION	COMMENT ABOUT OPERATIONAL STATUS	WHY ? ROADMAP TO HELP THE IRS MATURE REGARDING THAT SYSTEM ?
MAMBO Miramare – C1	**Operating system – Monthly maintenance**	Sustainability, integration, increase impacts & users
HF - RADAR	**Operating system – Monthly maintenance**	Sustainability, integration, increase impacts & users
MAMBO 2, MAMBO 3, MAMBO 4	**Operating system – Monthly maintenance**	Sustainability, integration, increase impacts & users
DWRG1, DWRG2, DWRG3	**Operating system – Monthly maintenance**	Sustainability, integration, increase impacts & users
Isonzo River, Tagliamento River	**Operating system – Monthly maintenance**	Sustainability, integration, increase impacts & users
PALOMA (CNR-ISMAR)	**Operating system - Sensor maintenance every 4 weeks**	Sustainability, integration, increase impacts & users
Acqua Alta (CNR-ISMAR)	**Operating system - Sensor maintenance every 2 weeks**	Sustainability, integration, increase impacts & users
S1-GB - Dynamic Pylon (CNR-ISMAR)	**Operating system - Sensor maintenance every 4 months**	Sustainability, integration, increase impacts & users
E1- Buoy (CNR-ISMAR)	**Operating system - Sensor maintenance every 4 months**	Sustainability, integration, increase impacts & users
IRB CIM operational oceanography	**Field campaigns (monthly biweekly) (integrated oceanografy delayed mode)**	Sustainability, integration, increase impacts & users
IRB RV001	**RV001 oceanographic buoy (real time)**	Sustainability, integration, increase impacts & users
Argo - Floats	**Operating system**	Integration

3- DATA SERVICES & PRODUCTS//IRS - NORTHERN ADRIATIC

OBSERVATION SYSTEMS & PLATFORMS IN THE REGION (COPIED FROM PREVIOUS TABLE)	IS THE SYSTEM REFERENCED IN SEXTANT ? IF NOT, WHICH CATALOG ?	WHAT IS THE RELATED EUROPEAN DATA INTEGRATOR (EMODNET, SEADATANET…)?
MAMBO Miramare – C1	No, EDIOS	EMODnet PHysics
HF - RADAR	No, EDIOS	EMODnet PHysics
MAMBO 2, MAMBO 3, MAMBO 4	No, EDIOS	National repositories NODC (free access)
DWRG1, DWRG2, DWRG3	No, EDIOS	National repositories NODC (free access)
Isonzo River, Tagliamento River	No, EDIOS	National repositories NODC (free access)
PALOMA (CNR-ISMAR)	No, Eurocean	CNR-ISMAR database; pCO2 available through ICOS (free access)
Acqua Alta (CNR-ISMAR)	YES, Eurocean, DEMIS-SDR	CNR-ISMAR database
S1-GB - Dynamic Pylon (CNR-ISMAR)	YES, Eurocean, DEMIS-SDR	CNR-ISMAR database, partially EMODnet Chemistry
E1- Buoy (CNR-ISMAR)	No, Eurocean, DEMIS-SDR	CNR-ISMAR database, partially EMODnet Chemistry
RV001	No,	National repositories (free access) Jadmon, Roscop,
IRB operational monitoring and oceanography	No	EMODnet and National repositories (free access) Jadmon, Roscop,
Argo - Floats	No,	
Glider	No,	
E2M3A	No	Oceansites database

3- DATA SERVICES & PRODUCTS // IRS - NORTHERN ADRIATIC SEA

KEY ACTIONS FOR DATA DISTRIBUTION AND PRODUCTS, PLANNED ACTIONS FOR IRS-SPECIFIC DATA MANAGEMENT PLAN

- Prepare a map of platforms and list of parameters available
- Discuss about what parameters are useful for the objectives of the NA-IRS
- Establish a common regional scientific strategy for NA-IRS at several level: national, institutional, operational.
- Integrate and harmonize physical, chemical and biological data coming from different sources.
- Analyze gaps and develop a strategy to fill them.
- Develop products useful for stakeholders (map, plot) and for modelling.

3- DATA SERVICES & PRODUCTS // IRS - NORTHERN ADRIATIC SEA

POTENTIAL NEW USERS OF DATA AND DATA PRODUCTS, EXPECTED DUE TO IRS ACTIONS

+ comments

At the moment we have to investigate about that.

4- USERS // IRS - NORTHERN ADRIATIC SEA

USERS SURVEY

LIST OF USERS	CATEGORIES OF USERS (R&D, Socieo-eco, Env. protection,Business & insurances, Policy maker, education and training, other (specify in comment)	COMMENTS, DESCRIPTION
Protezione Civile della Regione Friuli Venezia Giulia	Policy maker	Regional Environmental protection agency. Forecast and monitoring of hazard and extreme meteo-marine events
Proambiente S.c.r.l.	R&D	Development of ICT applications based on observation data (e.g. tourist information applications)
ARPAer Regione Emilia Romagna	Policy maker	Regional Environmental protection agency
ARPA Friuli Venezia Giulia	Policy maker	Regional Environmental protection agency
Municipality of Venice	Local authority	Meteo, sea status and tide levels
JRC	European Research Institute	Sea truth satellite data validation
NASA	US Space Agency	Sea truth satellite data validation
Regione Istria	Policy maker	Ecosystem services
Croatian waters	National agency for water quality monitoring	Monitoring Habitat and Natura 2000
Ministery for environmental protection and energetics	National ministery in charge of marine ecosystem monitoring	Monitoring MSFD

4- USERS // IRS - NORTHERN ADRIATIC SEA

LINKS TO OTHER REGIONAL ACTORS, SYSTEMS AND OTHER RIs in the IRS

Others regional institution operating on the same area

- Reference center for the Sea (Croatian national consortium for marine coastal observationonal oceanography and ecosystem monitoring)
- National Institute of biology (NIB) - Slovenija
- Agenzia Regionale per la Protezione dell'Ambiente (ARPA - FVG)

Others project and Research Infrastructure operating on the same area

- DANUBIUS - RI
- LTER International Network
- ICOS - RI

CONCLUSION // IRS - NORTHERN ADRIATIC SEA

STRATEGIC EVOLUTION OF THE REGION, THE IRS ? (Scientific scope ? Enlargement of the involved parties and institutions ? New data flow to harmonise ? Etc.)

... IN 5 YEARS ? (2025, after the end of J-S3)

Complete the integration of the transnational existing infrastructures, to make available an homogeneous data flow.
Analyze spatial and temporal gaps and develop a strategy to fill them.
Develop case of study with products useful for stakeholders.
Have a regional strategy plan for sustainability.

...IN 10 YEARS ? (2030)

Have an IRS fully operative, with gaps filled by models or expanding the platforms.
Have products useful for the stakeholders and accessible by portal or other internet application.

ANY OTHER ISSUES IN REGION TO BE RAISED AND DISCUSSED (if relevant)

- ...
- ...

TNA - VA // IRS - NORTHERN ADRIATIC SEA

1 - LIST OF TNA IN THE REGION

Acqua Alta oceanographic platform (off Venice Lagoon)
S1-GB elastic pylon (off Po delta)
MAMBO MIramare oceanographic buoy (Gulf of Trieste)

2 - LIST OF VA IN THE REGION

ADD text here

3 - ADDED VALUE OF PROVIDING AND REQUESTING TA/VA IN THE REGION ?

An added value could be the Marine Metrology Calibration Center that is the oceanographic calibration laboratory of the Department of Oceanography of the Istituto di Oceanografia e Geofisica Sperimentale - OGS located in Trieste.

- IRS REGION -

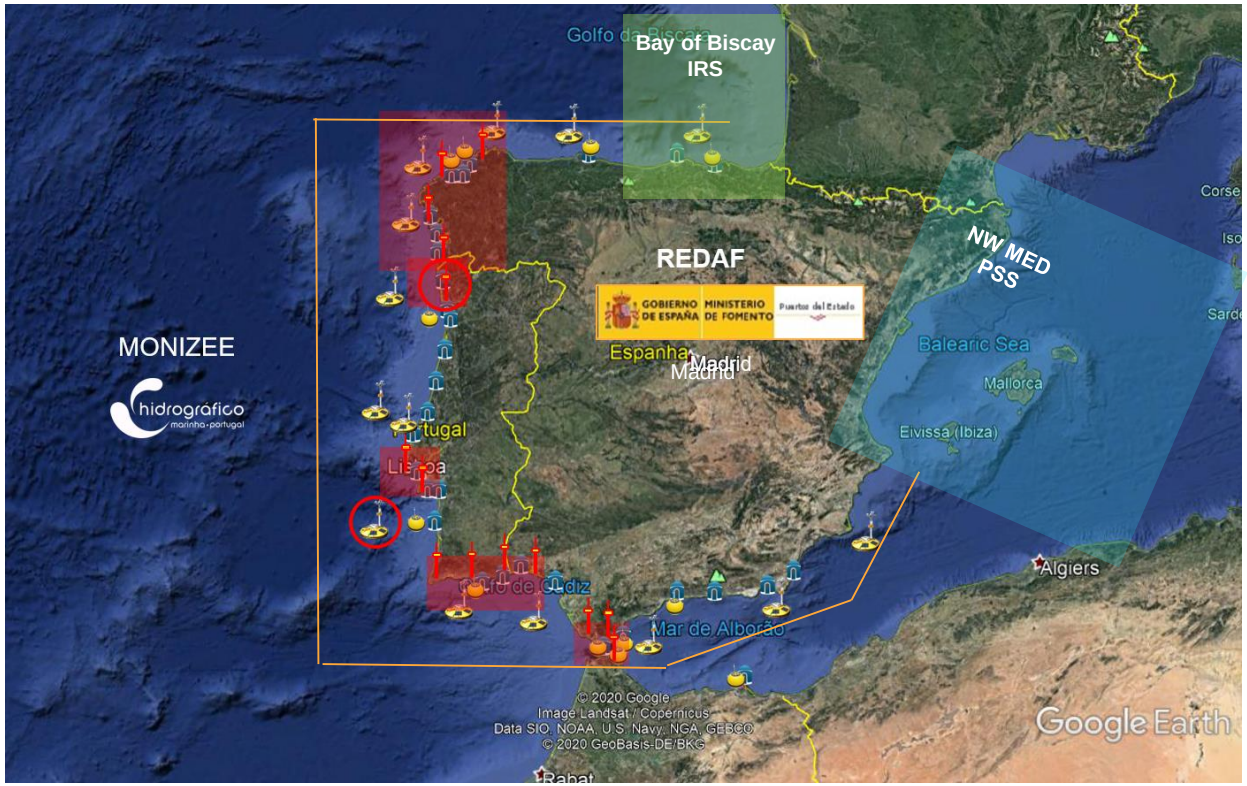
IBERIAN ATLANTIC MARGIN

IRS - IBERIAN ATLANTIC MARGIN

IRS Contact : João Vitorino (Instituto Hidrográfico)

INTRODUCTION - COUNTRIES AND INSTITUTES INVOLVED in the IRS

- Portugal (Instituto Hidrográfico) , Spain (Puertos del Estado)



SPECIFIC REGIONAL ORGANISATIONAL CHALLENGES in the IRS (trans-institutional, transnational) *+ comments*

- Articulation at transnational level (need to define best communication channels – IRS work)
- Articulation at trans-institutional level (in each nation) – need to raise interest in RI, to be defined
- Articulation between science disciplines (integration biology,biogeochemistry)

IRS - IBERIAN ATLANTIC MARGIN

IRS Contact : João Vitorino (Instituto Hidrográfico)

INTRODUCTION - COUNTRIES AND INSTITUTES INVOLVED in the IRS

- Portugal (Instituto Hidrográfico) , Spain (Puertos del Estado)

1- SCIENCE // IRS - IBERIAN ATLANTIC MARGIN

SPECIFIC SCIENTIFIC TOPICS AND OBJECTIVES (scientific case, link to WP1) in the IRS + *comments*

2 SPECIFIC SCIENTIFIC TOPICS

- **TRANSBOUNDARY PROCESSES AND CONNECTIVITY**
  - Biological connectivity (larvae transport, migration routes for large pelagic fish, deep ocean colonization...)
  - Chemical/Contaminants connectivity (processes for transnational transport)
  - Upwelling impacts on remote non-upwelling areas
  - Rivers 2 Coastal Ocean 2 Deep Ocean Basin Connectivity (role of canyons, IPC forcing, MW-AC, AAIW influence)
- **COASTAL IMPACTS**
  - Impacts of Extreme Weather Events
  - Coastal Erosion
  - Long term variability (D, MD) and Climate Change

SUPPORTING 3 SPECIFIC SCIENCE-SOCIETY CHALLENGES

- **OIL SPILL RESPONSE/SAR AND CRISIS MANAGEMENT**
- **OPERATIONAL RISK MANAGEMENT AT COASTS AND PORTS**
- **IMPLEMENTATION AND MONITORING OF MARINE STRATEGY FRAMEWORK DIRECTIVE (AND WATER FRAMEWORK DIRECTIVE)**

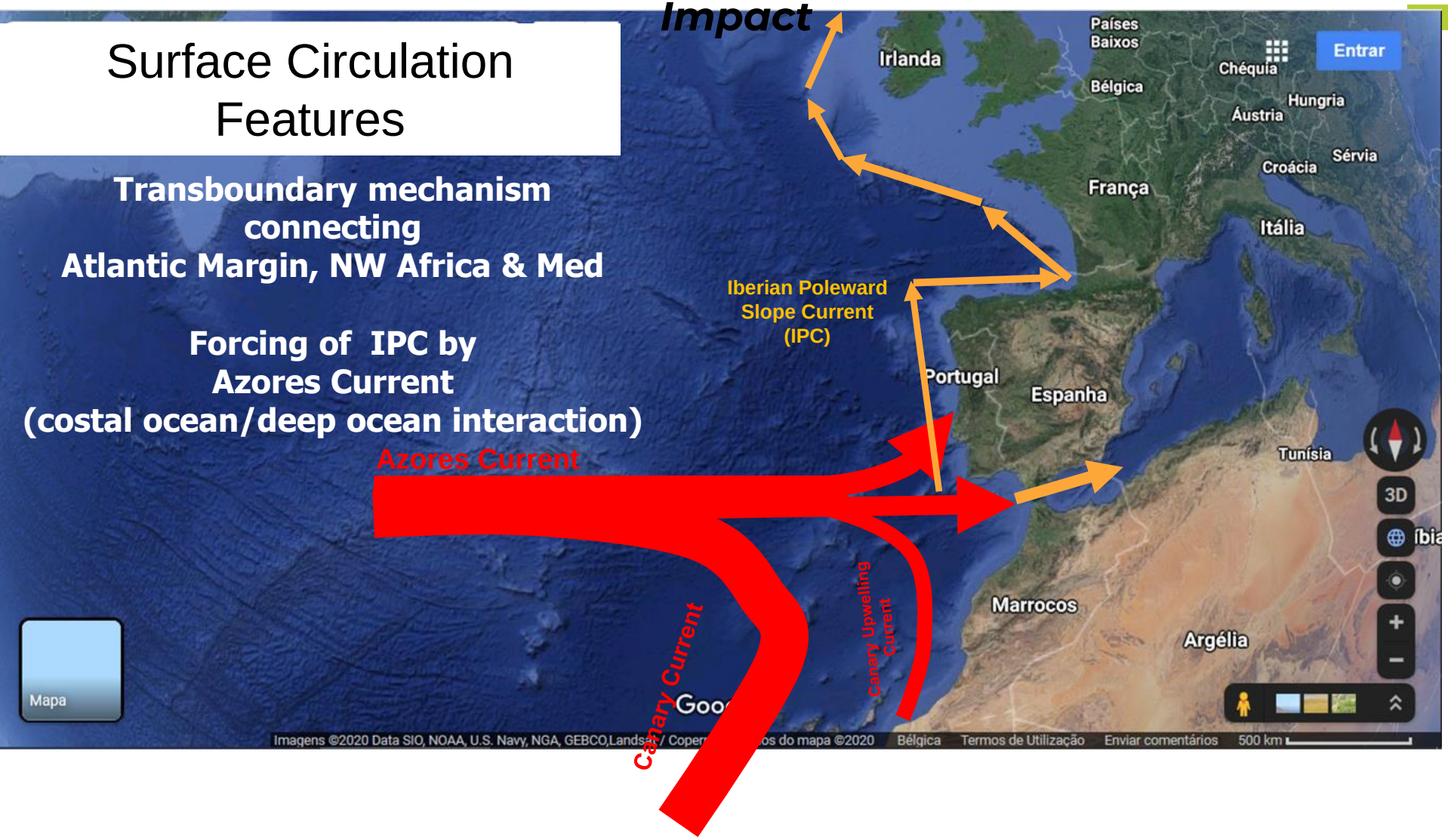
IRS - IBERIAN ATLANTIC MARGIN

WHY THESE SPECIFIC SCIENTIFIC TOPICS? Pan-European Relevance + Regional/Local Impact

Surface Circulation Features

Transboundary mechanism connecting Atlantic Margin, NW Africa & Med

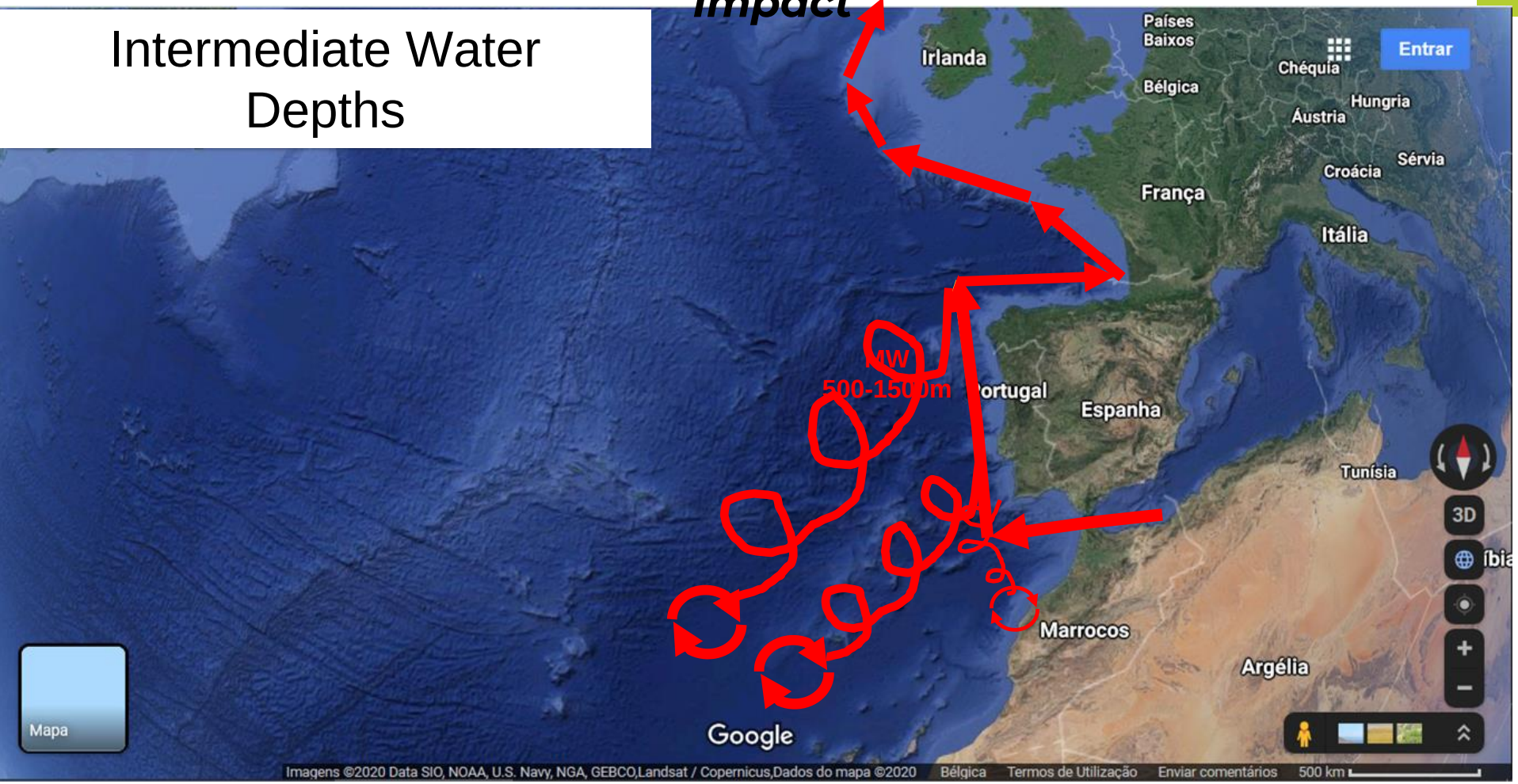
Forcing of IPC by Azores Current (costal ocean/deep ocean interaction)



IRS - IBERIAN ATLANTIC MARGIN

WHY THESE SPECIFIC SCIENTIFIC TOPICS?
Pan-European Relevance + Regional/Local Impact

Intermediate Water Depths



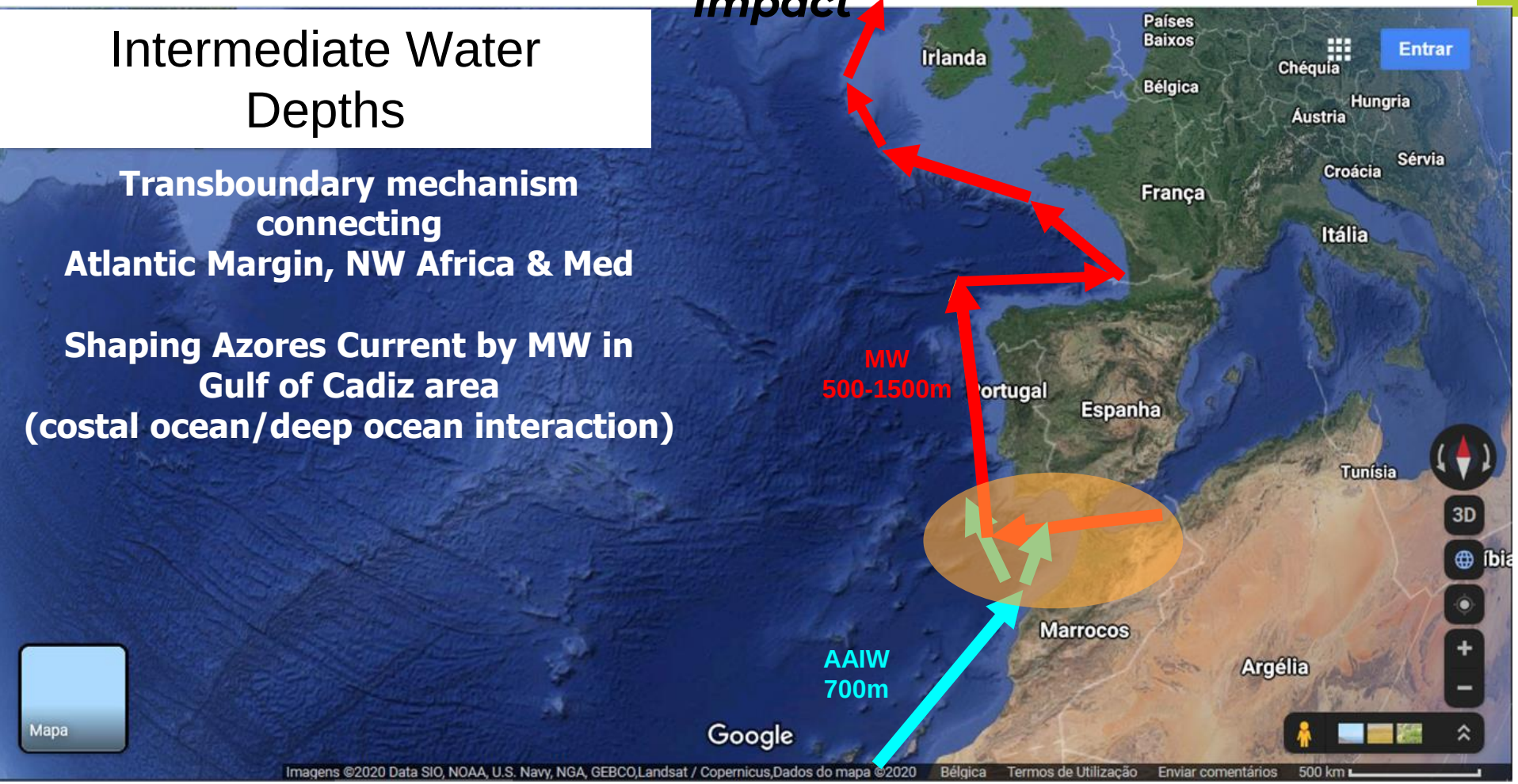
IRS - IBERIAN ATLANTIC MARGIN

WHY THESE SPECIFIC SCIENTIFIC TOPICS?
Pan-European Relevance + Regional/Local Impact

Intermediate Water Depths

Transboundary mechanism connecting Atlantic Margin, NW Africa & Med

Shaping Azores Current by MW in Gulf of Cadiz area (costal ocean/deep ocean interaction)



1- SCIENCE // IRS - IBERIAN ATLANTIC MARGIN

SPECIFIC OBSERVATIONAL CHALLENGES IN THE REGION, WHERE PILOT SUPERSITE IS EXPECTED TO PROVIDE PROGRESS *+ comments*

FROM THE LOGISTICS/TECHNOLOGICAL PERSPECTIVE

- Coastal ocean area exposed to severe weather conditions
- Required mapping of water column conditions (opportunity vessels, articulation with gliders/AUVs)
- Better articulation between main actors (one of main goals of present IRS)
- Lifetime of sensor operation (optimized strategy for extend operational performance)
- Integration of biological/biogeochemical measurements

FOM THE SCIENTIFIC PERSPECTIVE

- Diverse range of forcing conditions
- Complex interactions in the coastal ocean area linking surface to intermediate (sometimes even deep) conditions
- Broad range of marine environments/habitats

~~→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.~~

Please mention here what you would like to work on further

- Connecting with community (in particular PSS) to progress on integration of biological/biogeochemical measurements - pH, DCO2, chlorophylle (Fluorometry, other?), DO2 . Expected to give first steps in this direction during project lifetime
- Real time vs delayed mode operation and requirements (QC, other)

1- SCIENCE (& SOCIETY) // IRS - IBERIAN ATLANTIC MARGIN

SOCIETAL AND ECONOMIC EXPECTED IMPACTS (if known) in the IRS *+ comments*

- Improve support to coastal populations during extreme events
- Improve support during SAR operations and crisis at sea (oil spills)
- Improve support to Blue Economy (ports, maritime sector, fisheries sector, aquaculture, tourism)
- Contribute to a better management of the processes of coastal erosion
- Contribute to a better assessment of regional ecosystems fragilities and (e.g exposition to invasive species or contaminants)
- Contribute to a better assessment of hotspots for concentration of marine litter and microplastics

SCIENTIFIC IMPACTS

- Improve general understanding on the coastal ocean processes in this regional area
- Improve understanding of the mechanisms for litoral transport and coastal erosion
- Improve understading on the dynamical processes and biological connectivity mecanisms:
  - (a) along the NW Africa and Atlantic European margins
  - (b) from the MW basin to the Atlantic European margin and mid-Atlantic Basin

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- ...

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGI

SEA LEVEL MEASUREMENTS – COASTAL TIDAL STATIONS

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

SEA LEVEL MEASUREMENTS – COASTAL TIDAL STATIONS

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

SEA LEVEL MEASUREMENTS – COASTAL TIDAL STATIONS

Portuguese coast
12 Tidal Stations in main ports

Spanish coast
20 Tidal Stations in main ports

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

WAVE BUOYS (+ SURFACE TEMPERATURE)

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

WAVE BUOYS (+ SURFACE TEMPERATURE)

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

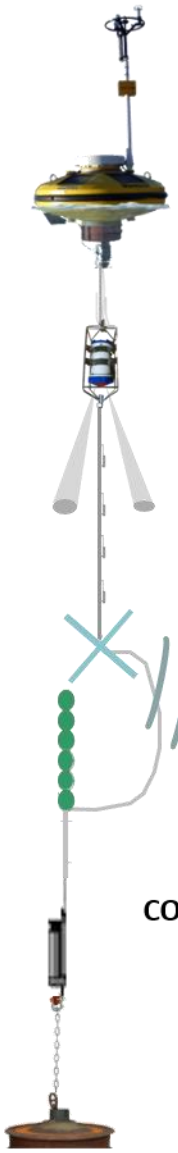
MULTIPARAMETRIC BUOYS

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

MULTIPARAMETRIC BUOYS

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

REAL TIME	AFTER BUOY RECOVER
METEOROLOGICAL MEASUREMENTS	
Atmospheric Pressure Air Temperature Relative Humidity Wind Speed & Direction	
WAVE MEASUREMENTS	
Wave parameters	Directional Spectra
WATER TEMPERATURE /SALINITY	
Temperature 3m depth Temperature 50m, 100m, 200m (Inductive SBEs)	ADCP thermistors (7m) SBE termistors (T) Low cost sensors (T, S)
CURRENT	
5 depths ADCP (9m-90m)	32 depth cells ADCP (9m-90m) Currentmeters ADCPs
BIOGEOCHEMICAL MEASUREMENTS	
Fluorometry at 3m Dissolved O2 at 3m Nephelometry at 3m OilSpill Alert	Low cost sensors



CONTAMINANT MONITORING

NIVA, RECETOX

SEAWEED DEVELOPMENT EXPERIMENTS

Seaweed Energy Solutions
Porto University

IMPLEMENTATION OF ACOUSTIC MONITORING

SUB-ECO & JONAS projects
Instituto Hidrográfico

COLONISATION EXPERIMENTS

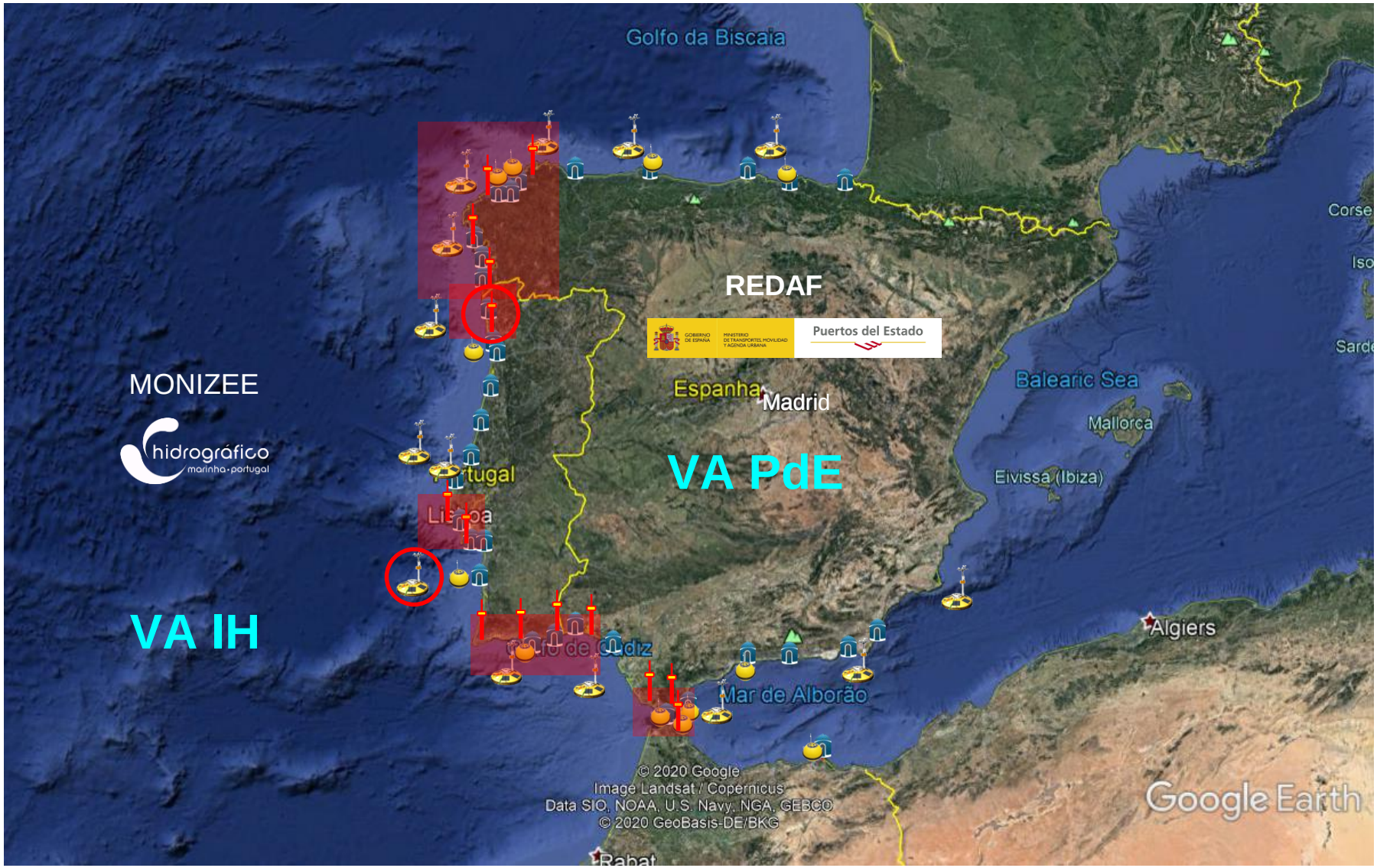
CESAM – Aveiro University

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

COASTAL HF RADAR STATIONS

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

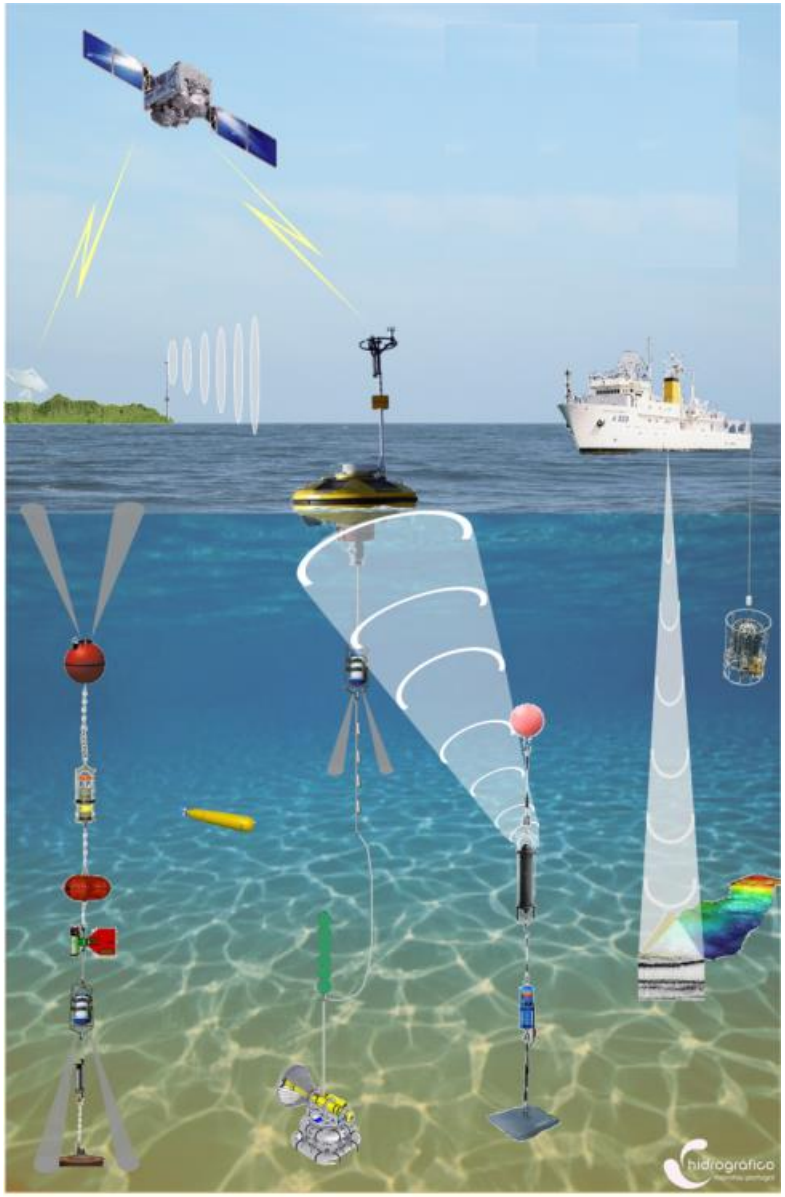
COASTAL HF RADAR STATIONS



2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

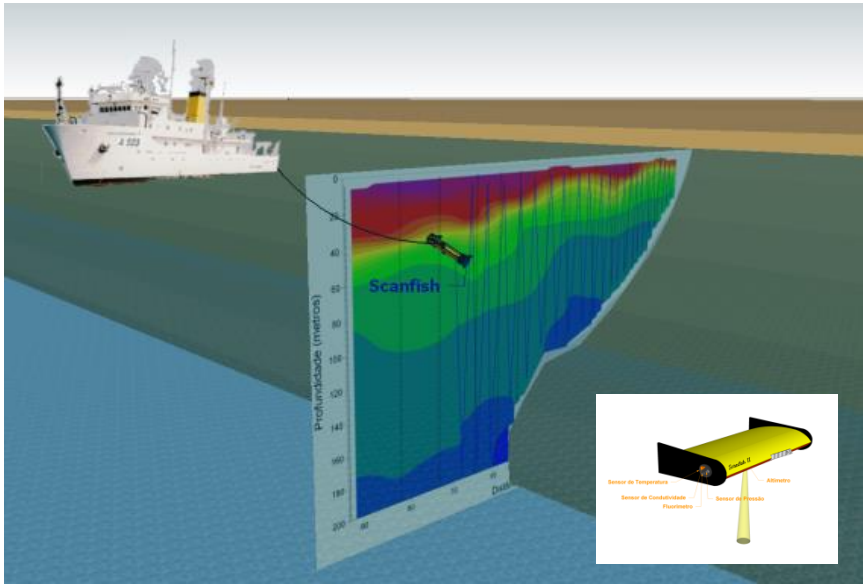
OPERATIONAL OBSERVATION SYSTEMS & PLATFORMS IN THE REGION	COMMENT ABOUT OPERATIONAL STATUS	WHY ? ROADMAP TO HELP THE IRS MATURE REGARDING THAT SYSTEM ?
MONIZEE Infrastructure (IH) Coastal Tidal Stations network	13 coastal stations along continental coast, real-time data transmission, web dissemination	National responsibilities: tidal charts for ports, hydrography/cartography, MSFD
REDMAR (PDE) Coastal Tidal Stations Network	22 coastal stations along continental coast Web dissemination	National responsibilities: Operational support ot ports, during crisis, tidal charts, hydrography, tsunami warning, mean and extreme sea levels, models validation
MONIZEE Infrastructure (IH) Wave Buoys Network	3 buoys, transmission wave parameters each 10min, spectral data daily. Web dissemination	Support to port administrations, support to coastal communities, MSFD
REDCOS (PDE) Wave Buoys Network	9 buoys along continental coast, Web dissemination	National responsibilities: Operational support ot ports, during crisis, extreme events, models validation
MONIZEE Infrastructure (IH) Multiparametric buoys network	4 (5) MP buoys offshore continental coast (depths~1500m, one ~100m)	Support to ports, to coastal communities, contibution to MSFD
REDEXT (PdE) Multiparametric Buys Network	9 MP buoys offshore continental coast (depths~1000-2000m)	National responsibilities: Operational support ot ports, during crisis, extreme events, model validations
MONIZEE Infrastructure (IH) HF Radars Network	5(6) x 12MHz hourly transmission of surface currents (~1km resolution)	Support to ports and coastal communities, contribution to MSFD,
REDAF (PdE) HF Radar Network	8 HF radar stations (1x12 MHz + 3x25MHz + 4x5 MHz)	National responsibilities: Operational support ot ports, during crisis, model validation

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN



Opportunistic measurements during platform maintenance actions

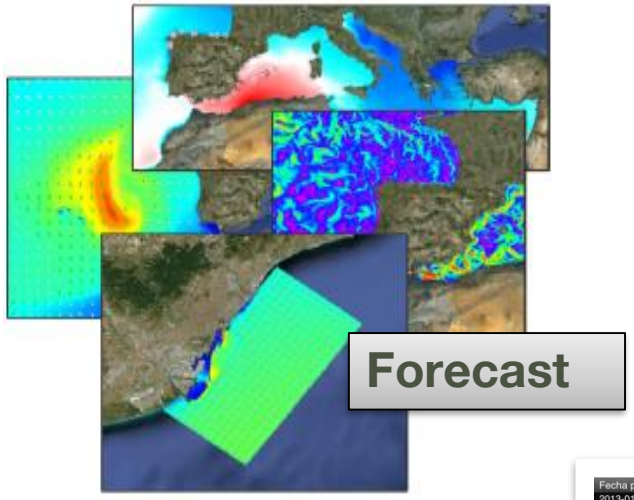
- *Potential CTD/Water sampling coverages*
- *Ongoing measurements (VMADCP, towed vehicles)*
- *Future installation of ferry-box systems onboard vessels*
- *….*



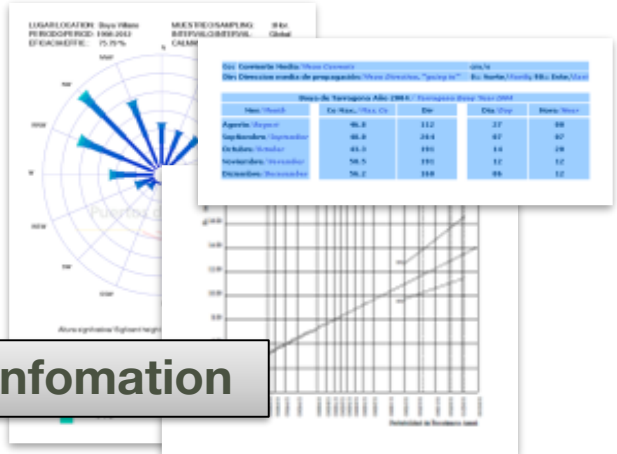
PdE integrating approach

SAMOA Project
Downscalling and Downstream Services focusing on ports needs

Real time Networks



Forecast



Climate infomation

Downstream and Outreach

Articulation with Autonomous Systems

GLIDERS
Collaboration
IH-PLOCAN (Spain)

Missions
February 2020

AUVs
Collaboration
PdE-U.LasPalmas

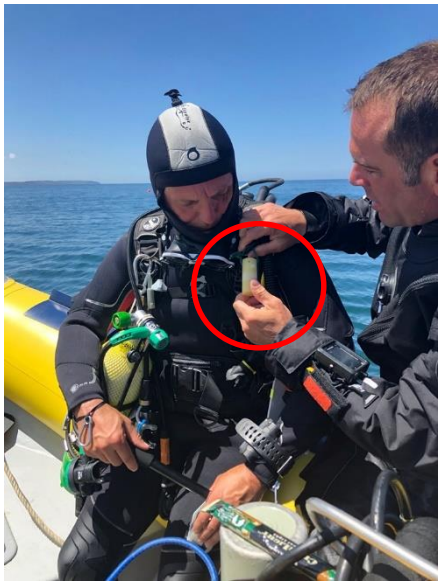
IH-FEUP (Portugal)

Citizen Science

Low cost sensors Star-ODDI)

Colaboration with
Nazaré Town Hall
Les Aquanautes (France)

Missions
June 2019
June 2020

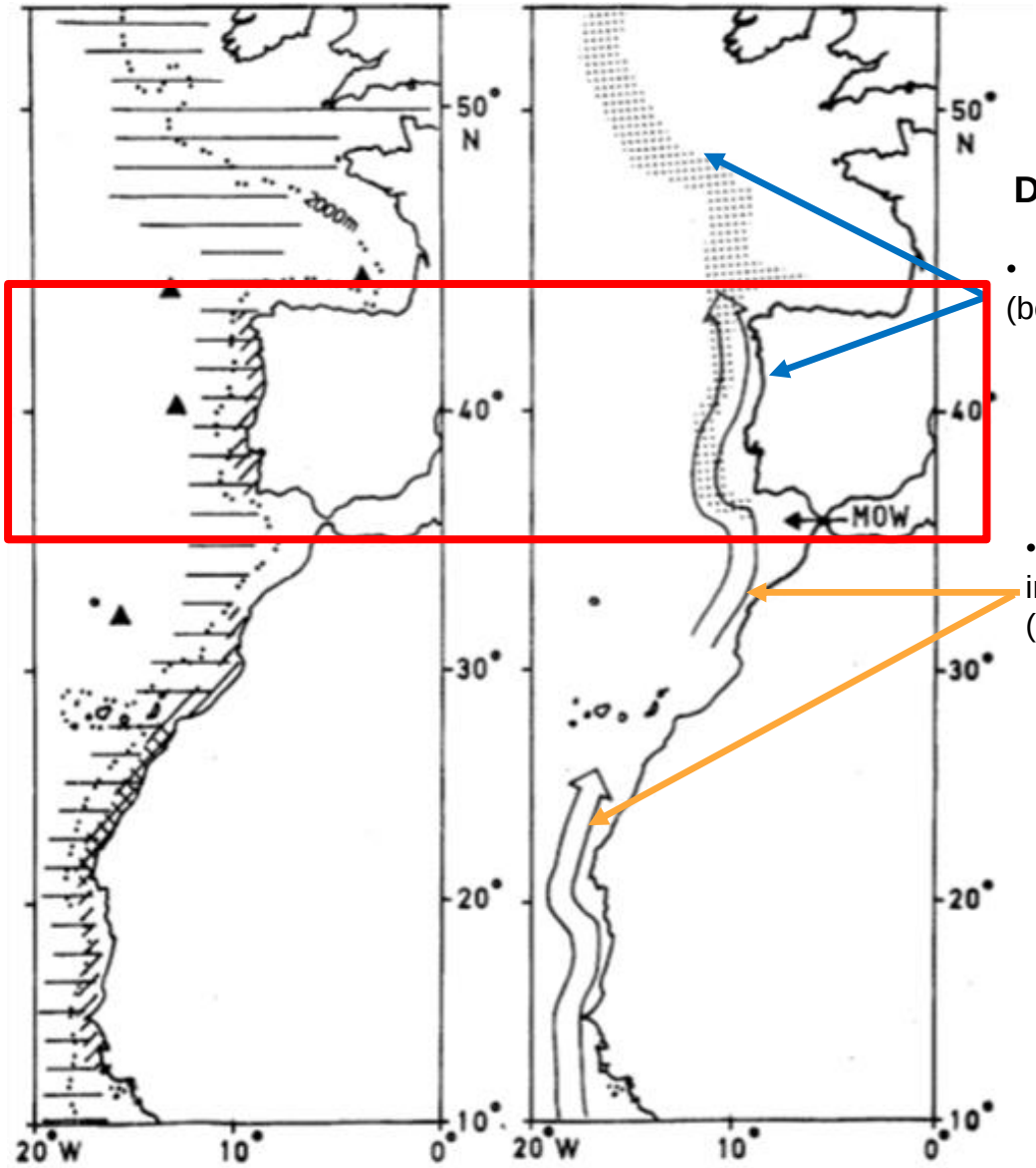


Addressing Pan-European Biological Connections

***Calanoides carinatus* - dia- pausal copepodids(C5)**

Distribution of:

- reproductive populations (horizontal hatching)
- single records (solid triangles)



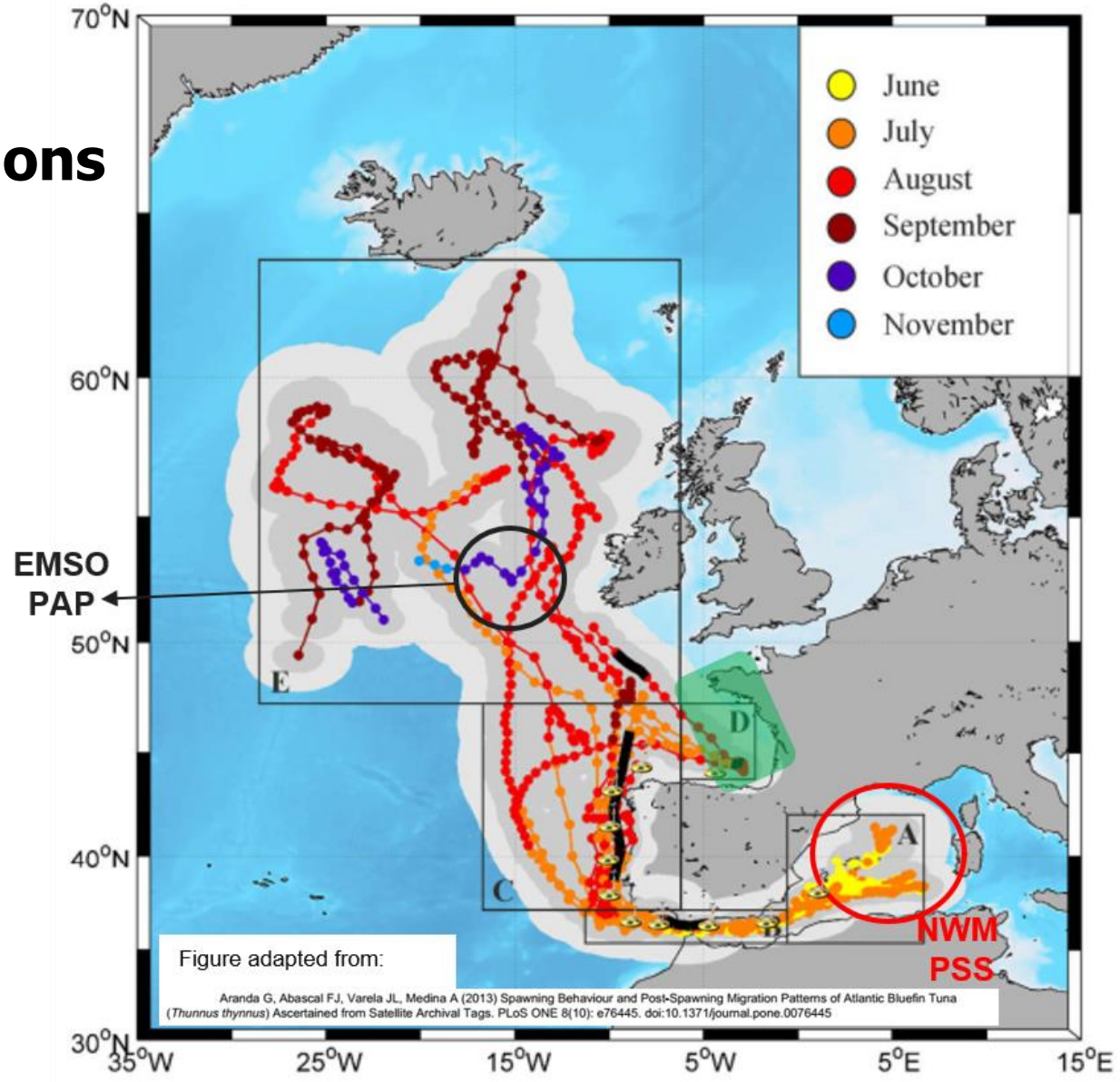
Drift of resting stage:

- entrainment within MW (below 600 m shading)
- within the intermediate undercurrent (400-600 m, arrows)

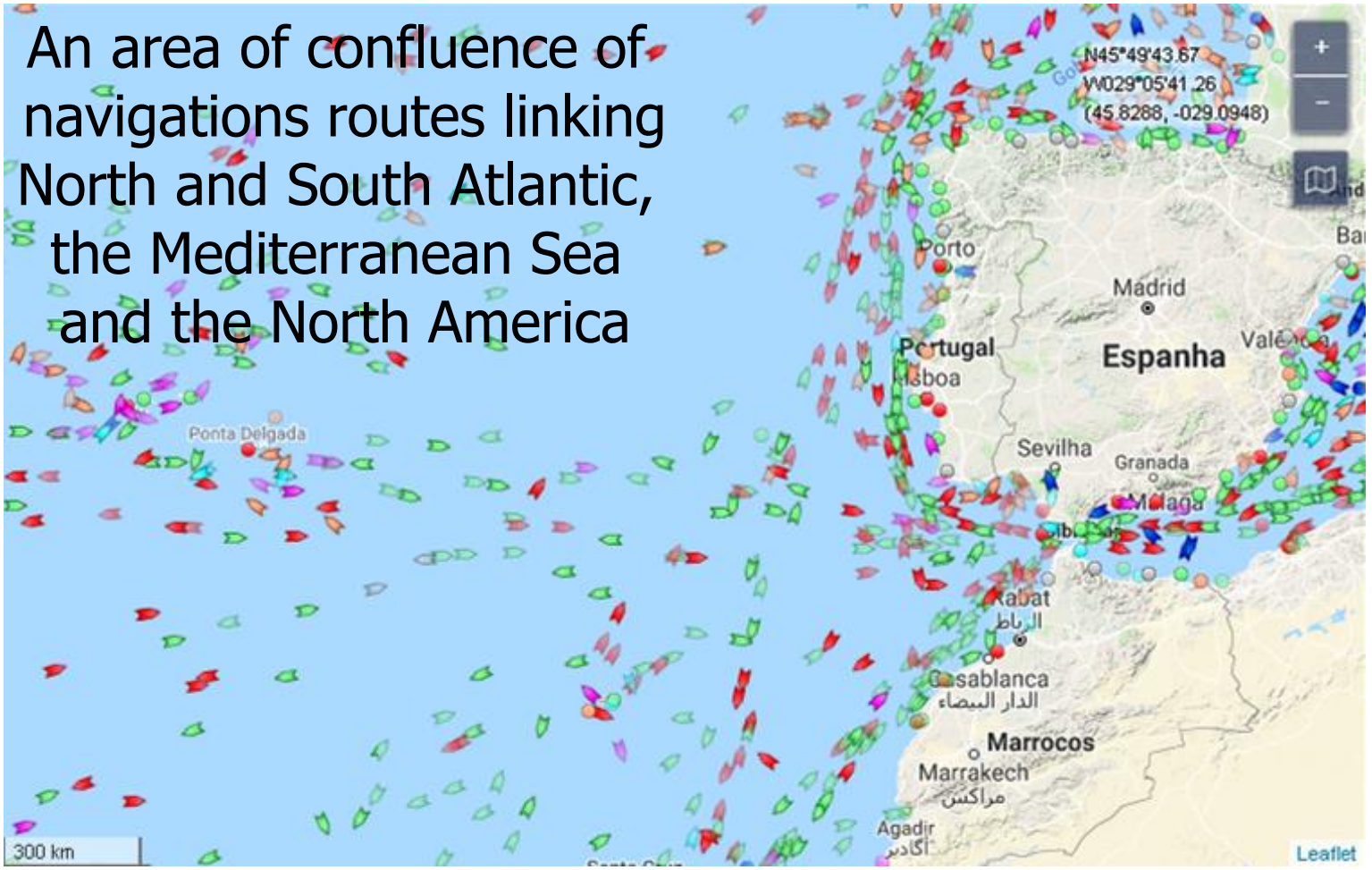
John, Mittelstaedt & Schulz, 1998

Addressing Pan-European Biological Connections

Seasonal migrations routes for Atlantic Bluefin tuna tracked by satellite tags
(Aranda et al, 2013)



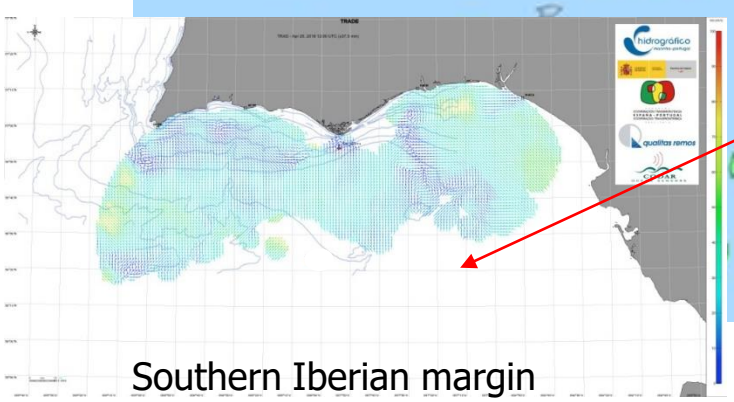
Addressing Pan-European Anthropogenic Impacts



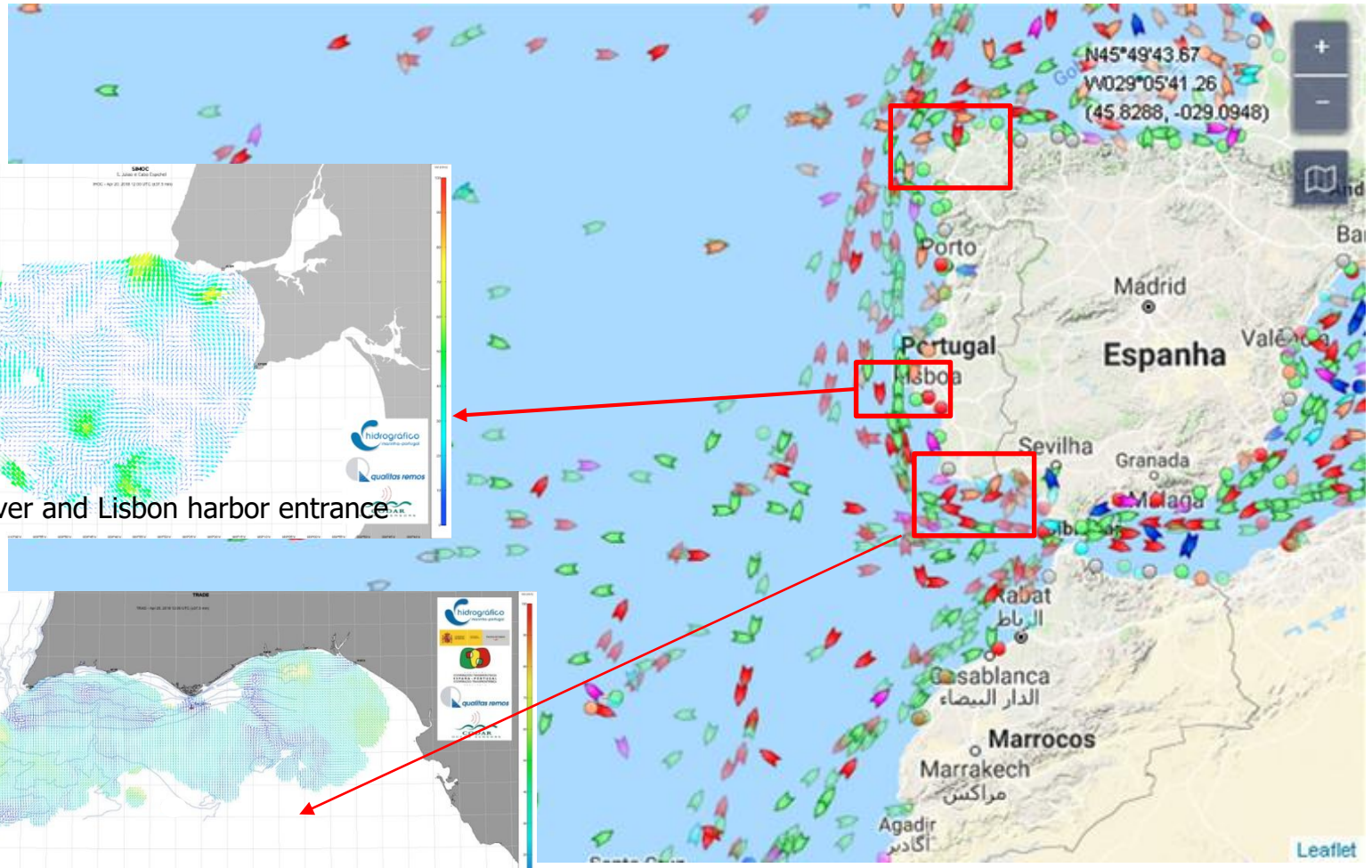
AIS Marine Traffic (25 June 2018) https://www.marinetraffic.com/

Addressing Pan-European Anthropogenic Impacts

Tagus river and Lisbon harbor entrance

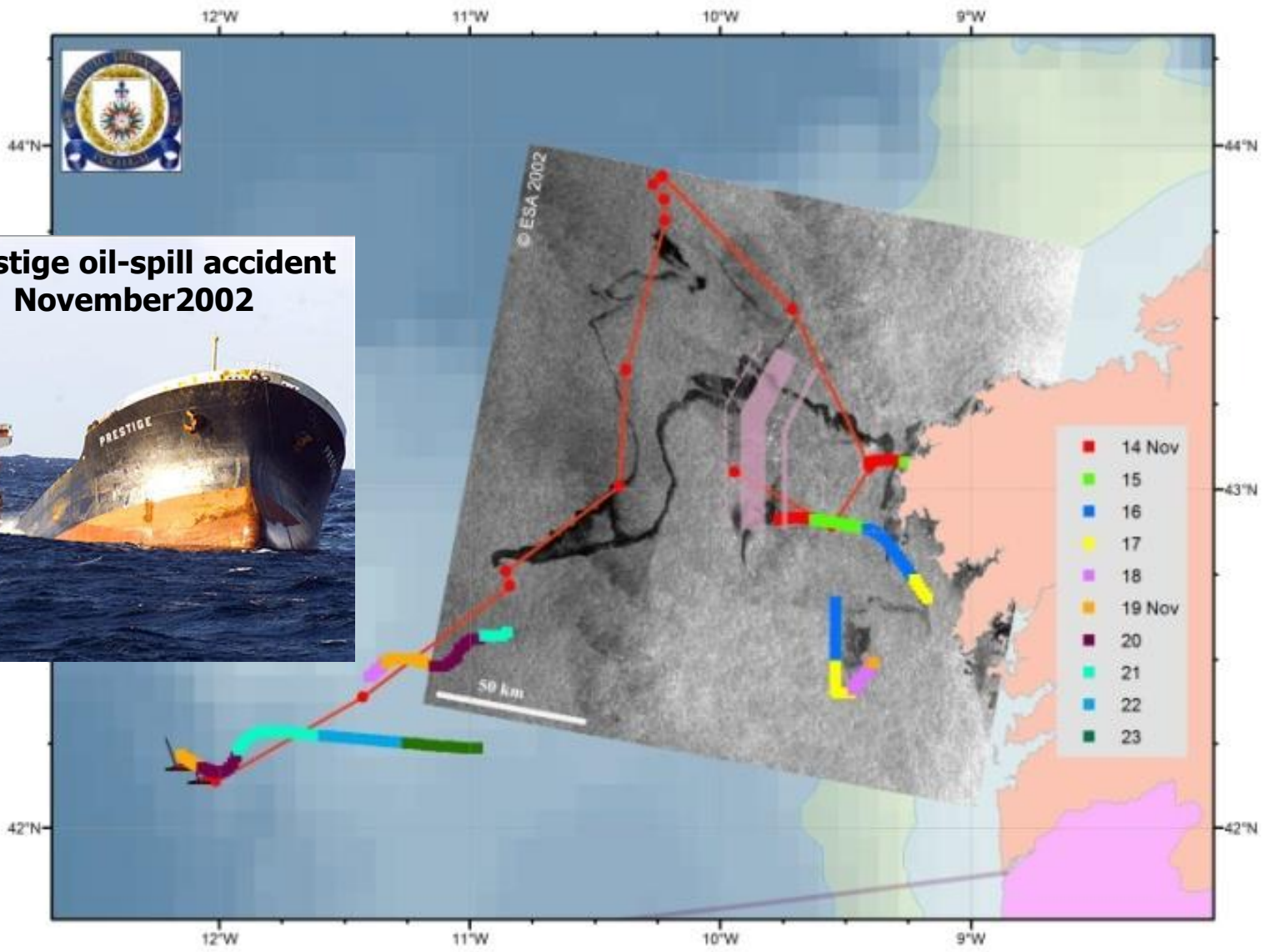


Southern Iberian margin

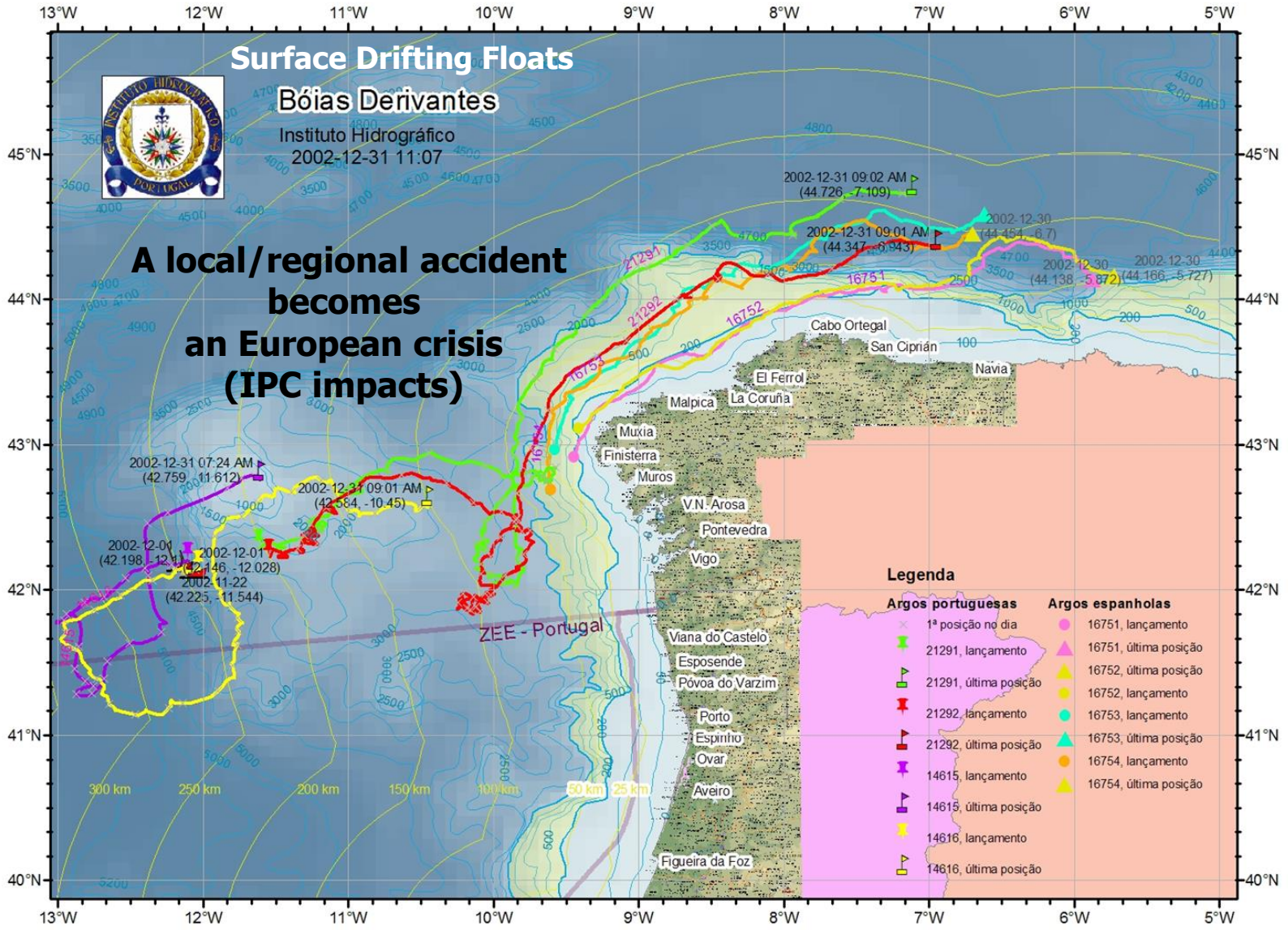


https://www.marinetraffic.com/

Addressing Pan-European Anthropogenic Impacts

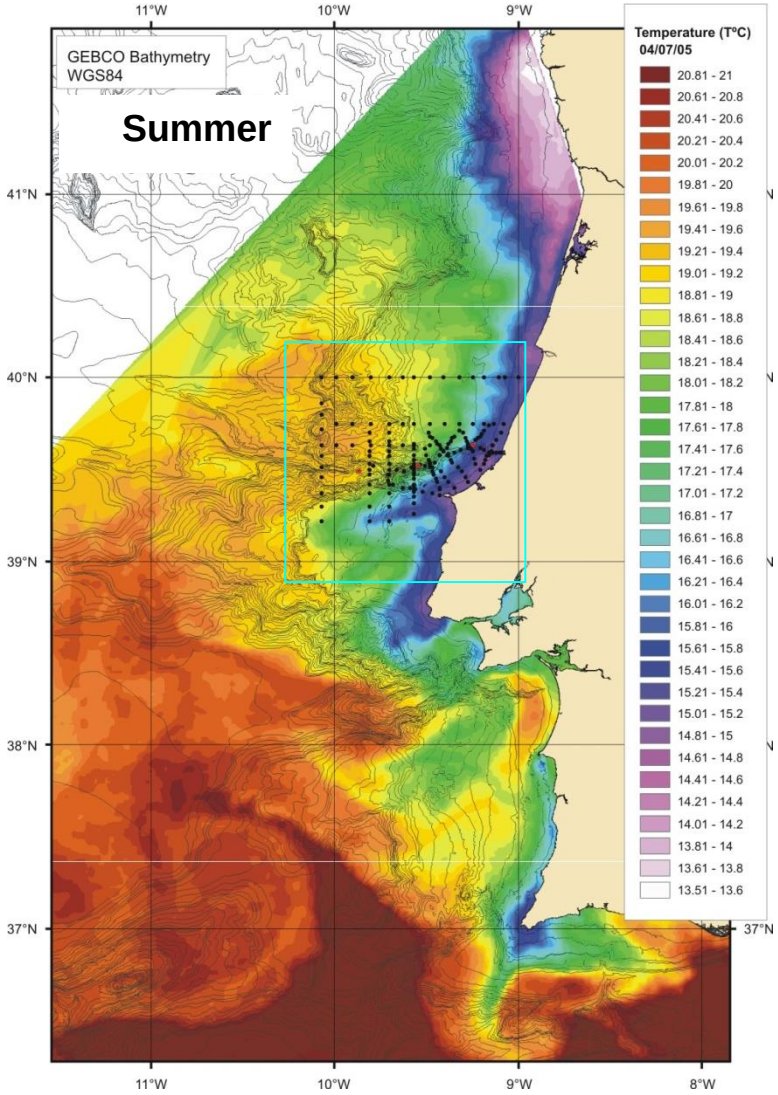


Addressing Pan-European Anthropogenic Impacts



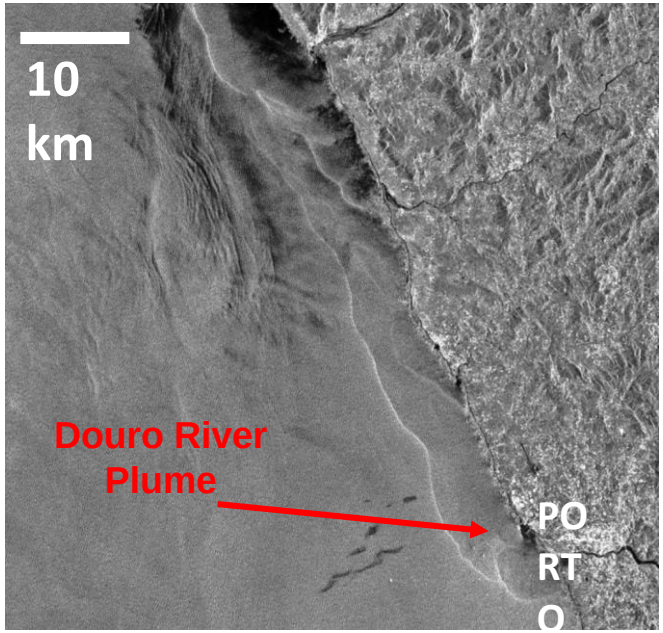
2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

COASTAL UPWELLING & IMPACTS ON REMOTE REGIONS AND DEEP OCEAN



SST image kindly provided by INIAP/IPIMAR

RIVER INFLUENCE ON COASTAL OCEAN



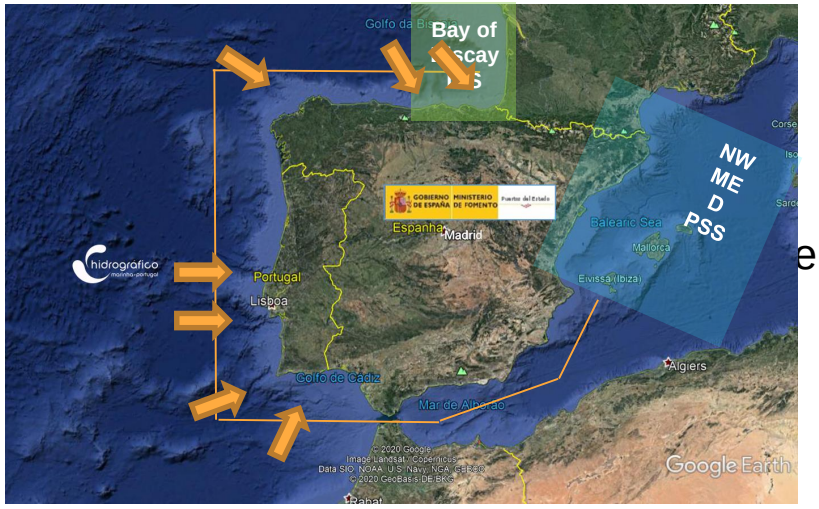
A. Jorge da Silva e João Vitorino . "**MONIZEE:** Rede de Monitorização em Tempo Real e Sistema de Previsão Operacional da Margem Continental Portuguesa"

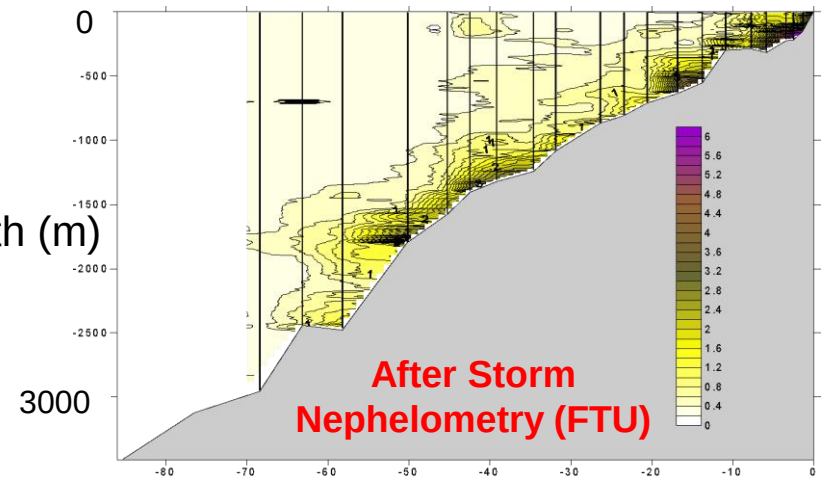
2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

SEASONAL EVOLUTION OF BEACH CONDITIONS AND COASTAL EROSION

Images project Beach2Canyon kindly provided by João Duarte (IH-GM)

ROLE OF CANYONS IN CONNECTING THE NEARSHORE TO THE DEEP OCEAN

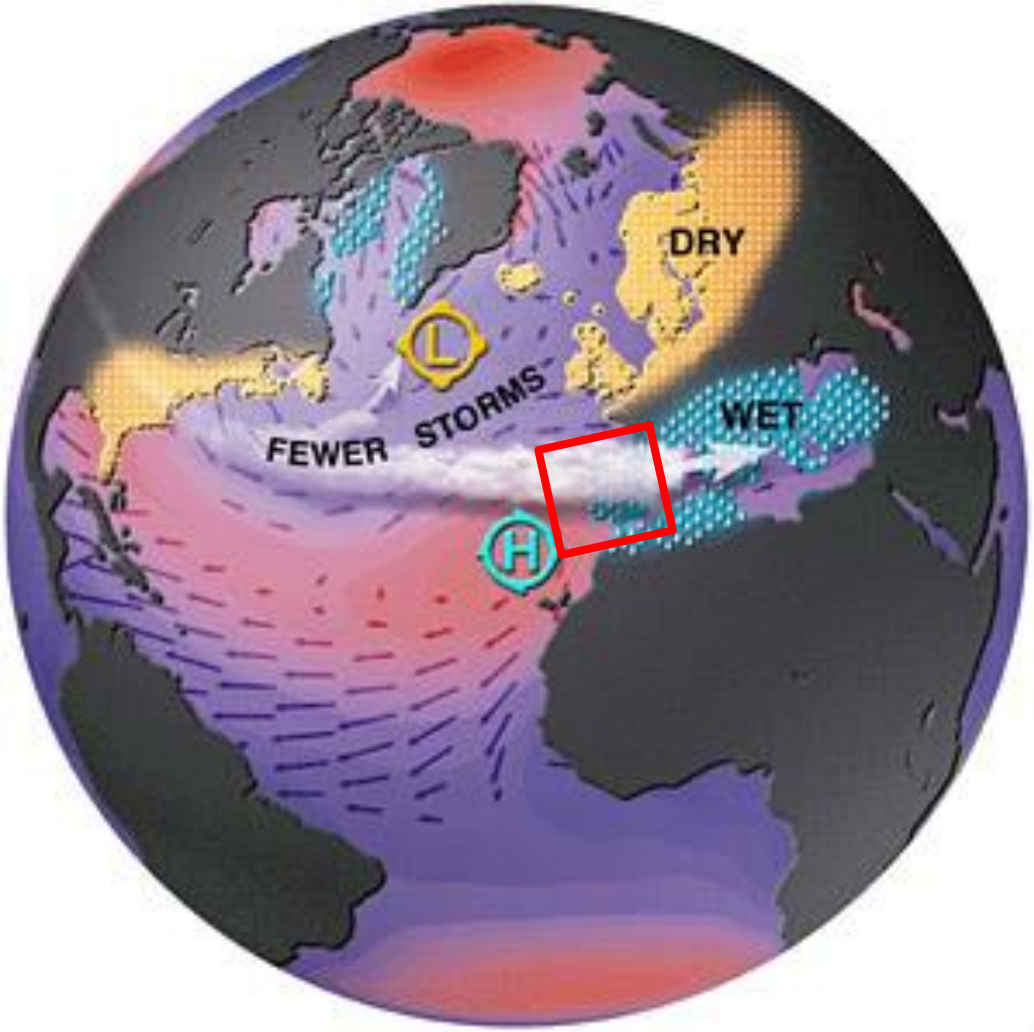




2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

UNDERSTANDING & TRACKING LONG-TERM VARIABILITY & CLIMATE CHANGE

WINTER NORTH ATLANTIC OSCILLATION (winter NAO)



NEGATIVE PHASE

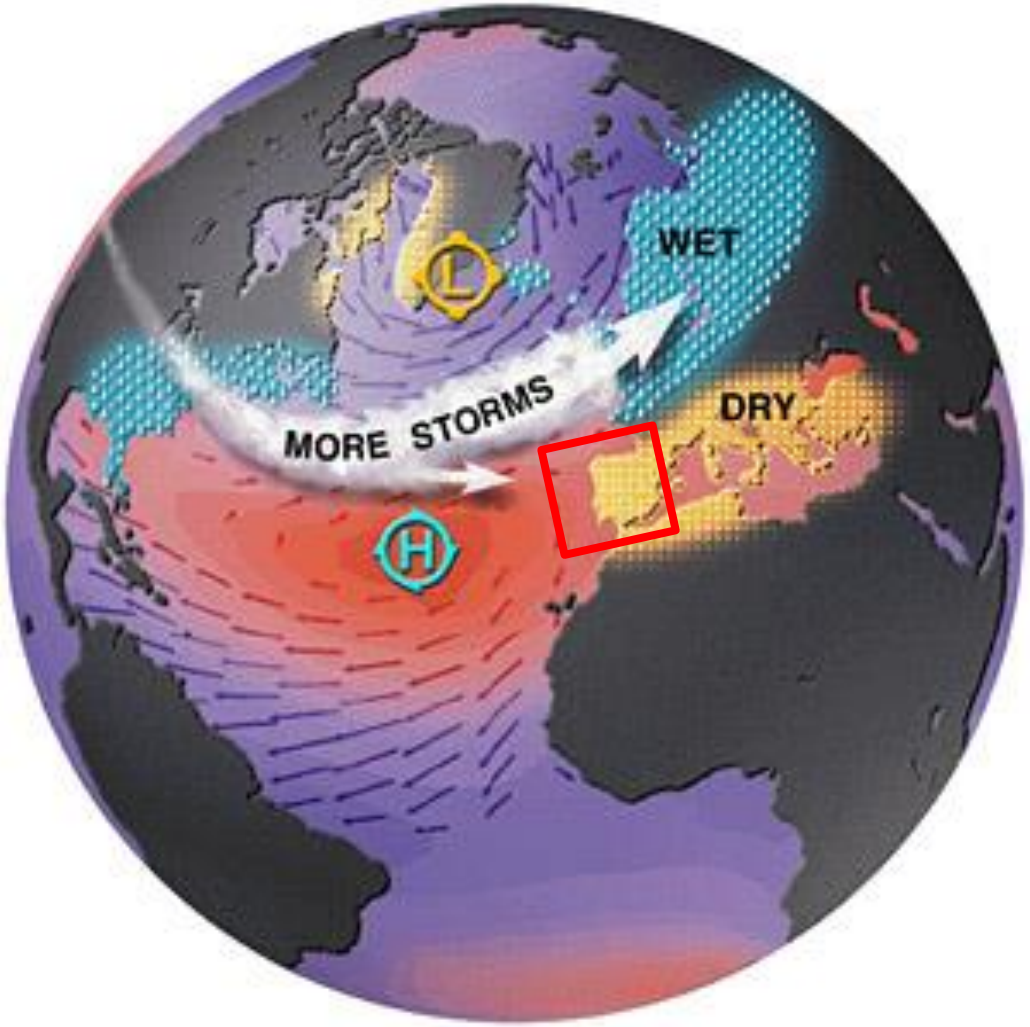
Atmospheric Pressure
and
Wind Direction
over
North Atlantic

(Credits : LDEO/M. Visbeck)

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

UNDERSTANDING & TRACKING LONG-TERM VARIABILITY & CLIMATE CHANGE

WINTER NORTH ATLANTIC OSCILLATION (winter NAO)



POSITIVE PHASE

Atmospheric Pressure
and
Wind Direction
over
North Atlantic

(Credits : LDEO/M. Visbeck)

2- OBSERVATION SYSTEMS // IRS - IBERIAN ATLANTIC MARGIN

HARMONIZATION CHALLENGES *+ comments*

- Coastal Sea level Measurements
- Wave Buoys
- Multiparametric Buoys
- HF Radars
- Autonomous Vehicles (gliders, AUVs)
- Integration of Biological & Chemical Sensors/Sampling Systems

KEY/PLANNED ACTIONS FOR IRS HARMONIZATION *+ comments*

- Meetings involving elements from one institution visition the other institution
- Workshops, with potential involvement of other elements from monitoring communities
- Participation in workshops, symposium, other events – possibility of dedicated session?
- Videoconferences

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- …

3- DATA SERVICES & PRODUCTS // IRS - IBERIAN ATLANTIC M

OBSERVATION SYSTEMS & PLATFORMS IN THE REGION (COPIED FROM PREVIOUS TABLE)	IS THE SYSTEM REFERENCED IN SEXTANT ? IF NOT, WHICH CATALOG ?	WHAT IS THE RELATED EUROPEAN DATA INTEGRATOR (EMODNET, SEADATANET…)?
MONIZEE Infrastructure (IH) Coastal Tidal Stations network	YES (CMEMS In Situ)	Data to IBIROOS (EMODNET), GTS
REDMAR (PDE) Coastal Tidal Stations Network	YES (CMEMS In Situ)	IBIROOS, MONGOOS, CMEMS In Situ TAC, PSMSL EMODnet, Tsunami Warning Systems
MONIZEE Infrastructure (IH) Wave Buoys Network	YES (CMEMS In Situ)	Data to IBIROOS (EMODNET), GTS
REDCOS (PDE) Coastal Wave Buoys Network	YES (CMEMS In Situ)	IBIROOS, MONGOOS, CMEMS In Situ TAC, PSMSL EMODnet,
MONIZEE Infrastructure (IH) Multiparametric buoys network	YES (CMEMS In Situ)	Data to IBIROOS (EMODNET), GTS
REDEXT (PdE) Multiparametric deep water Buoys Network	YES (CMEMS In Situ)	IBIROOS, MONGOOS, CMEMS In Situ TAC, PSMSL EMODnet,
MONIZEE Infrastructure (IH) HF Radars Network	YES (CMEMS In Situ)	Data to IBIROOS (EMODNET), GTS
REDAF (PdE) HF Radar Network	YES (CMEMS In Situ)	IBIROOS, MONGOOS, CMEMS In Situ TAC, PSMSL EMODnet,

3- DATA SERVICES & PRODUCTS // IRS - IBERIAN ATLANTIC M

KEY ACTIONS FOR DATA DISTRIBUTION AND PRODUCTS, PLANNED ACTIONS FOR IRS-SPECIFIC DATA MANAGEMENT PLAN *+ comments*

- Integration of missing information in CMEMS In Situ TAC
- Improve metadata availability for coastal sea level (e.g. EuroGOOS Tide Gauge Task Team-GLOSS activities)
- Exchange QC/QA procedures
- Complete integration of data in the GTS

- Implementation of web dissemination compliant with INSPIRE (Hidrográfico+)

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- …

3- DATA SERVICES & PRODUCTS // IRS - IBERIAN ATLANTIC MARGIN

POTENTIAL NEW USERS OF DATA AND DATA PRODUCTS, EXPECTED DUE TO IRS ACTIONS

+ comments

- New users from the national scientific communities
- New users from the European/Global community (cooperation with other partners from Atlantic basin)
- New users from the business & insurance sector
- Introduction of new QC procedures/tools for data collected by the IR

→ IF UNCLEAR OR UNKNOW, WILL BE ANSWERED DURING THE WORKSHOP.
Please mention here what you would like to work on further

- …

4- USERS // IRS - IBERIAN ATLANTIC MARGIN

USERS SURVEY

LIST OF USERS	CATEGORIES OF USERS (R&D, Societo-eco, Env. protection,Business & insurances, Policy maker, education and training, other (specify in comment)	COMMENTS, DESCRIPTION
Universities, Research Centers, State Laboratories	R&D, Education & training	Regular use of data Need to increase publicity of products
Gov. Agencies Environment, Civil Protection	Env. Protection	
Port Administrations	Socio-Economic, Business&insurances	Extend range of support
National Gov, Regional Gov, Local City Halls	Policy Maker	Find efficient communication channels
CMEMS, EMODNET, GTS, IBIROOS	Global data providers & Forecast Centers	Automatic data disseminatio
Aquaculture, Offshore Wind/Wave Energy, Tourism, Maritime sector	Businnes & insurances	Increase the interest in products
Sports Community (surfers, sailors, …)		
General Public		

4- USERS // IRS - IBERIAN ATLANTIC MARGIN

LINKS TO OTHER REGIONAL ACTORS, SYSTEMS AND OTHER RIs in the IRS *+ comments*

- OTHER RIS
  - EMSO (participation in common actions not yet with na articulated strategy)
  - EUROARGO (participation in common actions not yet with na articulated strategy)
  - EMBRC (to be developed)
  - MONGOOS

- OTHER REGIONAL ACTORS
  - PLOCAN (CANARY ISLANDS)
  - PARTNERS IN AZORES & MADEIRA

- OBSERVING SYSTEMS & MONITORING NETWORKS
  - IBIROOS (PdE is Regional Node for InSitu Data Collection), GOOS
  - NEAMTWS (North East Atlantic & Mediterranean Tsunami Warning System)
  - GLOSS (Global Sea Level Observing System)
  - ESURFMAR

- MAIN DATA PROVIDERS & FORECAST CENTERS
  - CMEMS (PdE is the node for InSitu Data Collection)
  - EMODNET
  - IBIROOS
  - GTS

- ATLANTIC INITIATIVES: AANCHOR

Articulation with other RIs

EMSO - PAP
Water column & bottom measur.

Installation of larval traps and colonization experiments (U.Aveiro - Portugal)

EMSO - CANARY
Water column (geology,biology)

CONCLUSION // IRS - IBERIAN ATLANTIC MARGIN

STRATEGIC EVOLUTION OF THE REGION, THE IRS ? (Scientific scope ? Enlargement of the involved parties and institutions ? New data flow to harmonise ? Etc.)

… IN 5 YEARS ? (2025, after the end of J-S3)

- Harmonization completed in the key areas of monitoring
- First steps in the integration of biological/biogeochemical sensors. Acquired best pratices/operational issues from JERICO community
- Delayed mode vs real time (already started in CMEMS but need to be improved)
- Strategy for articulation with opportunity ship, autonomous vehicles & citizen science
- Links/articulation with the national communities involved in coastal ocean monitoring
- Links/articulation with the national communities of modelers, remote sensing
- Key users mapped, communication channels and two-way flow of information established
- Key stakeholders mapped, communication channels and two-way flow of information established

…IN 10 YEARS ? (2030)

ANY OTHER ISSUES IN REGION TO BE RAISED AND DISCUSSED (if relevant)

- …
- …

JERICO-S3

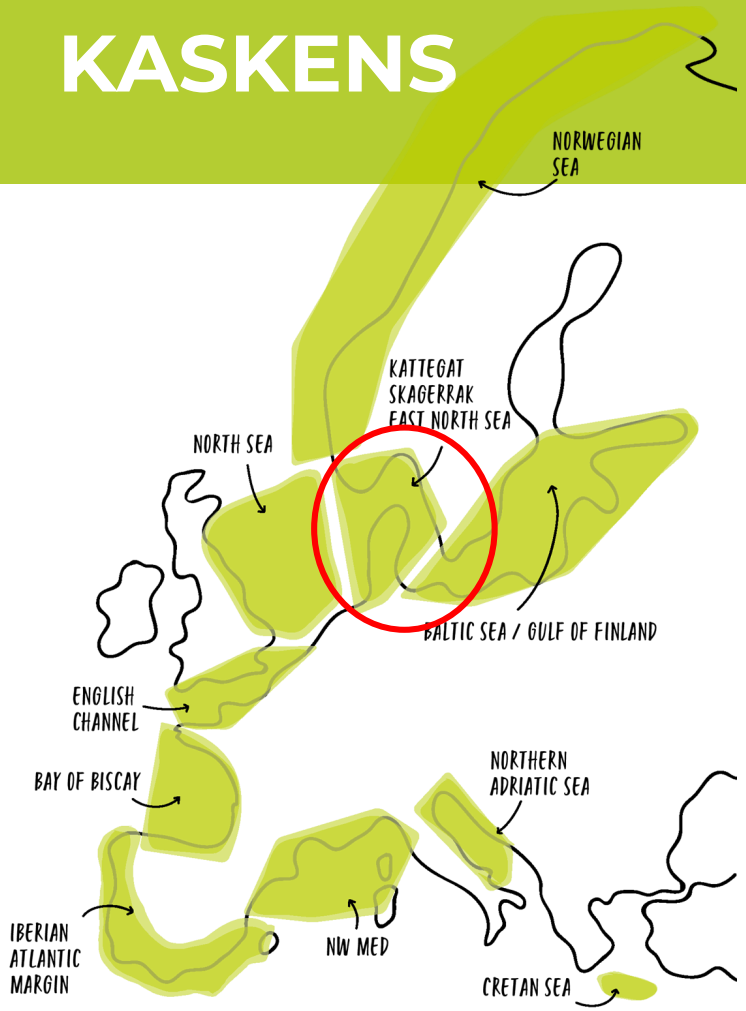
Temporary logo for KICK-OFF MEETING purposes only - Feb.2020

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 871153.
Project coordinator: Ifremer

- END of REGION -

- IRS REGION 4 -

KATTEGAT SKAGERRAK E-N SEA KASKENS



IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere, SMHI

COUNTRIES INVOLVED in the IRS and “regional adjacent” countries *+ comments*

- Sweden
  - SMHI, Bengt Karlson, Anna Willstrand-Wranne, Markus Lindh, Patrick Gorringe & Emilie Brevière
  - + cooperation with the Univ. of Gothenburg

- Norway (also involved in Norwegian Sea IRS)
  - IMR, Henning Wehde and Lars Naustvoll
  - NIVA, Andrew King, Helene Frigstad, Kai Sørensen, Luca Nizzetto, Jose Antonio Baz Lomba and Wenche Eikrem

- Denmark
  - DMI, Jun She

- Germany
  - HZG Yoana Voynova, Holger Brix, Klas Möller and Vlad-Alexandru Macovei (also involved in North Sea IRS)
  - AWI Philipp Fischer, Madlen Friedrich, Markus Brand, Nancy Lange

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

SPECIFIC SCIENTIFIC TOPICS (scientific case, link to WP1) in the IRS + *comments*

- From proposal:
  - Impact of eutrophication, climate variability, climate change, and land-sea interactions on marine ecosystem services, biodiversity, and eutrophication.
- Advection of harmful algae, oil, litter and microplastics
- Biodiversity of phytoplankton
- Early detection and warnings of Harmful Algal Blooms
- Climate change effects
  - Carbonate system (pCO_2, pH, total alkalinity, DIC)
  - Biogeography (geographical distribution) of phytoplankton
  - Seasonal distribution of phytoplankton (focus on HAB)
  - Timing of spring bloom
  - Length of growth season
  - Spatial-temporal dynamics of higher trophic levels (zooplankton,fish and macroinvertebrates)
- Contaminants

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

SCIENTIFIC OBJECTIVES in the IRS *+ comments*

- Phytoplankton diversity and abundance - Implementing automated imaging in flow systems in stationary ocean observatories and in ferrybox systems on research and merchant vessels

- A Harmful Algal Bloom early detection and warning system
  - Combining observations and modelling

- Higher trophic dynamics: Implementing in-situ imaging and automated object analysis systems in stationary ocean observatories (e.g. Underwater observatory North Sea, HZG/AWI , Klas Ove Möller)

- Carbonate system
  - Harmonisation between different underway carbonate measuring sensors
  - Harmonisation with Surface Ocean Carbon Atlas data
  - Observations at the Baltic Sea-North Sea transition zone
  - Long term change

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

SCIENTIFIC OBJECTIVES in the IRS *+ continued*

- Litter and microplastics
  - Demonstrate monitoring capacity using ferry box and novel analytical device (pyrolysis GCMS)
  - Study the baltic outflow for microplastics
  - Test whether microplastics are vectors of antibiotic resistant genes
- Contaminants
  - Assessing seasonality of marine concentrations of pharmaceuticals and personal care products (PPCPs), in relation to the seasonality of sources (this will require repeated campaigns).
  - Assessing the Baltic outflow on a yearly basis for PPCPs (through coupling concentration data with hydrodynamic model simulation).
  - Assessment of spatial/temporal variability of degradation products of PPCPs (from EU priority list) in relation to spatial/temporal variability of phytoplankton (assuming biota is a driver of degradation).

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

SOCIAL AND ECONOMIC OBJECTIVES in the IRS *+ comments*

- Contribute to the goals of the UN Decade of Ocean Science for Sustainable Development
- Raise awareness of the current situation in the IRS at the National Marine Agencies and the National Food Agencies, in the aquaculture and fishing industries
- Educate the public in the coupling with their own actions and the environmental situation in the IRS and globally
- Improve cooperation between national and regional stakeholders in the area, e.g.
  - County administration boards
  - Water quality monitoring programs

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

OBSERVATION SYSTEMS INVOLVED in the IRS (LINK TO WP2)

OBSERVATION SYSTEMS & PLATFORMS IN THE REGION	OPERATIONAL READINESS LEVEL (1 TO 9) → will be redefined by the workshop	WHY ? ROADMAP TO HELP THE IRS MATURE REGARDING THAT SYSTEM ? INTEGRATION IN THE REGION AND BETWEEN REGIONS (WP5) ?
R/V Svea, monthly cruises, includes ferrybox, sampling at stations etc. SMHI	5-9	Novel equipment for automated observations to be implemented in observing programs, e.g. Imaging FlowCytobot and carbonate system sensors
Flødevigen ocean observatory, IMR	9	High frequency water sampling and novel sensors, e.g. Imaging FlowCytobot
G.M. Dannevig, monthly research cruises between Norway and Denmark, IMR	9	Operational cruises with sampling of physical and lower trophic levels on specific sites repeated monthly, twelve months a year
FerryBox on ferry Color Fantasy, Oslo-Kiel, NIVA	3-9	Novel sensors, e.g. Imaging FlowCytobot and carbonate system sensors
FerryBox on ferry Color Hybrid, Strömstad-Sandefjord NIVA	3	Novel sensors, e.g. Imaging FlowCytobot and carbonate system sensors; installed and operational by mid-2020
FerryBox HZG	7-9	High frequency sampling and novel sensors, e.g. Hydro-FIA for pH and TA
Coastal oceanographic buoys Kosterfjorden and Kristineberg SMHI + Univ. of Gothenburg	7	Cooperation with the University of Gothenburg through EMBRC
Off shore oceanographic buoy, SMHI	9	At present only temperature and wave parameters are measured
Helgoland underwater observatory (with CPICS imaging system, HZG) in 10 m water depth, AWI	9	At present, most oceanographic parameters are fully operational and higher tropic levels are pre-analyszed. Ocenographical data are transferred to Pangaea
Helgoland underwater observatory (with CPICS imaging system, HZG) in 25 m water depth, AWI	2	The deep observatory will be deployed in October 2020.

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

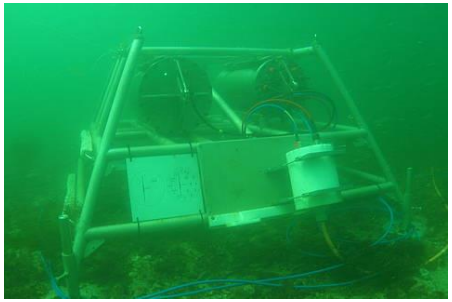
OBSERVATION SYSTEMS INVOLVED in the IRS (LINK TO WP2)

Ferries
Color Hybrid and
Color Fantasy

Koster fjord buoy
in marine national park

Ferrybox on R/V Svea

IFCB



Underwater observatory
Helgoland

Wave buoys
Wave height and direction
Temperature

R/V Dannevig

JERICO-S3

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

→ ASSOCIATED RIs and systems (e.g. EMSO, satellite etc.)

- COSYNA
- DANUBIUS (no Scandinavian sites)
- NorSOOP
- Norwegian Environmental Agency coastal ecosystem monitoring system (including HABs)
- Ocean colour observations, e.g.
  - Sentinel 3A and B, OLCI, Chlorophyll a (xxx algorithm)
- SST observations from satellite
- Oil observations from satellite
- Ice observations from satellite

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

DATA SERVICES AND PRODUCTS (LINK TO WP6)

DATA MANAGEMENT PLAN OF THE REGION (Data manager, interoperability, actions ?)

…

General: EMODnet/CMEMS, NOOS, HZG Euro FB database

Sweden: Swedish National Oceanographic Data Center at SMHI

Norway: Norwegian Marine Data Centre, Nor Environ. Agency Vannmiljø,

Denmark:

Germany: NOOS/BSH/CMEMS data portal

OBSERVATION SYSTEMS & PLATFORMS IN THE REGION (COPIED FROM PREVIOUS TABLE)	IS THE SYSTEM REFERENCED IN SEXTANT ? IF NOT, WHICH CATALOG ?	INTEGRATION IN THE DATA MANAGEMENT PLAN OF THE IRS (HARMONISATION, SERVICES, PRODUCTS) ?
TBD	TBD	TBD

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

USERS SURVEY

LIST OF USERS	CATEGORIES OF USERS (R&D, Societo-eco, Env. protection,Business & insurances, Policy maker, education and training, other (specify in comment)	COMMENTS, DESCRIPTION
Relevant national ministries	Policy-maker	Ministries of Climate/Environment, Trade/fisheries
National marine/water management agency	Policy-maker	Swedish Agency for marine and Water Management, The Federal Maritime and Hydrographic Agency - Germany, Norwegian Environment Agency
Regional/local water management body	Policy-maker	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency - Germany, Viken County Council, Norway, County administration boards of Halland and Västra Götaland, Sweden.
National food safety authorities	Governmental body	Swedish National Food Agency, Norwegian Food Safety Authority
National Coast Guard	Military body	Swedish, Norwegian,
Aquaculture and fishing industries	Business	
Tourism	Business	
National Climate Service Center	Education/research	Germany, Norway

IRS-Kattegat-Skagerrak-Eastern NS

IRS Contacts : Bengt Karlson and Emilie Breviere

→ TIMELINE OF ACTIONS PLANNED - WAY FORWARD ?

1) FOR THE NEXT 12 MONTHS

- Start implementing automated phytoplankton observations in stationary ocean observatories and ferrybox systems
- Some of the partners will participate in *GlobalHAB symposium on automated in situ observations of plankton* in Sweden 1-6 June 2020
- Start process of integrating existing long term datasets across the region

1) FOR THE 4 YEARS OF PROJECT

- Joint system for reference images of phytoplankton for machine learning/AI at www.nordicmicroalgae.org and www.ecotaxa.org
- Set up a prototype of an early detection and warning system for harmful algae for the area
- Develop a climate service based on high quality observations of ecosystems and environmental parameters

1) IRS LONG TERM OBJECTIVES

- An operational climate service based on high quality observations of ecosystems and environmental parameters
- Providing services to the public, business etc.
- Ocean observatories in strategic locations (based on currents) in operation
- Ferrybox systems operating with long term funding
- Data sharing in near real time
- Sharing of quality controlled data on an annual basis
- Joining German, Danish, Swedish and Norwegian observing systems

- IRS REGION 5 -

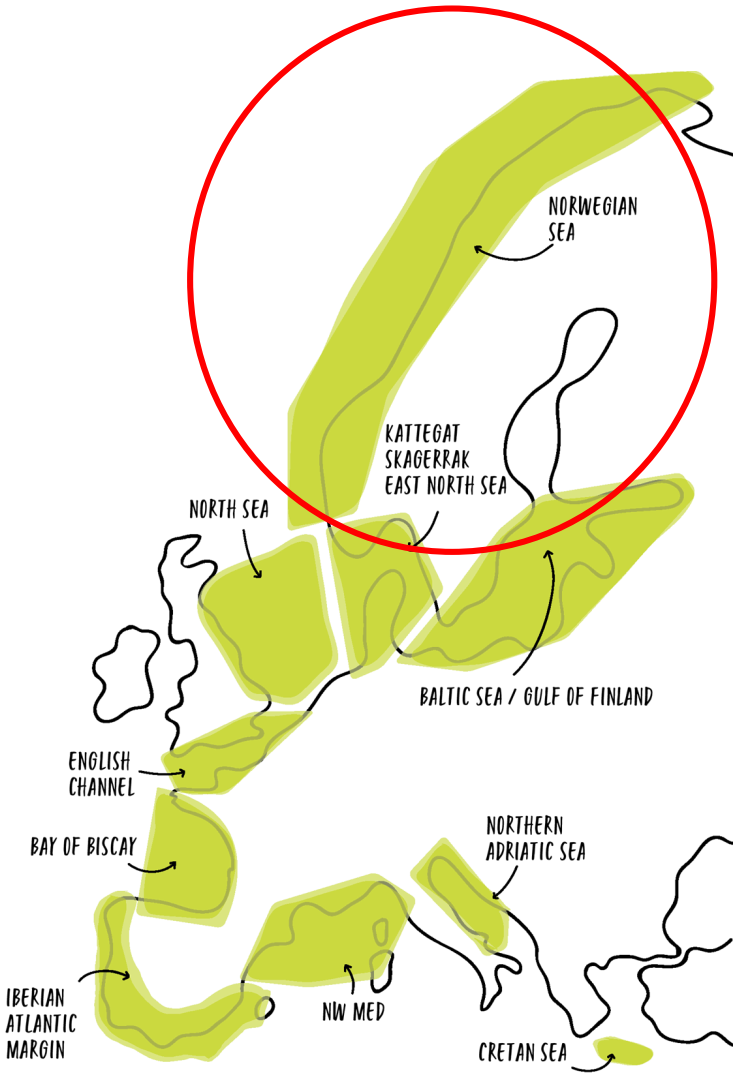
NORWEGIAN SEA

IRS - NORWEGIAN SEA

IRS Contact : IMR/ Henningt Wehde

INTRODUCTION - COUNTRIES AND INSTITUTES INVOLVED in the IRS

- IMR
- NIVA
- NORCE
- FAMRI



SPECIFIC REGIONAL ORGANISATIONAL CHALLENGES in the IRS

- Integration
- Institutional collaboration on questions related to the impact of Aquaculture as well as Oil and Gas exploration, Mining and Fisheries
- Defragment the observational efforts and improve knowledge gain in relation with central scientific and environmental questions

1- SCIENCE // IRS - NORWEGIAN SEA

SPECIFIC SCIENTIFIC TOPICS AND OBJECTIVES (scientific case, link to WP1) in the IRS + *comments*

- Harmful Algal Blooms: Developing an Harmful Algal Bloom early detection and warning system (combination observation and modelling)
- Land-Coastal-Ocean interactions: Retention in fjords etc
- Human Impact/ Impact of Climate Change: Adaptation/Carbon system Sustainable fisheries management: defragment observations supporting Sustainable fisheries
- Integrated Ecosystem Assessment: Contribution to understand the impact of the different stressors and drivers on the marine ecosystem
- Contaminants: Impact of contaminants on human health
- Quality assurance
- Emerging technology/parameters/eDNA

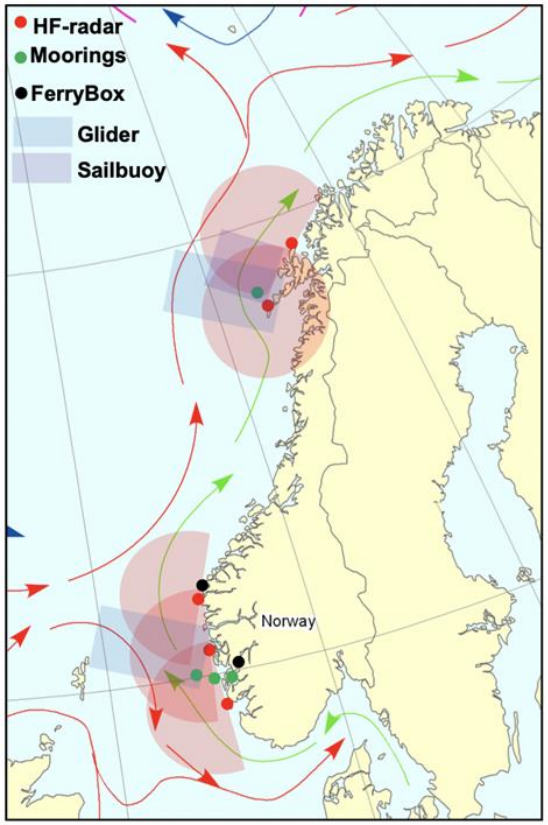
1- SCIENCE (& SOCIETY) // IRS - NORWEGIAN SEA

SOCIAL AND ECONOMIC OBJECTIVES in the IRS *+ comments*

- Raise awareness of the current situation in the IRS
- Contribute to improve situation in the IRS
  - Focal point
    - Defragment observations
    - Integrate information
- Intensify the collaboration with the different Marine Institutes and Food Safety Agencies
- Intensify collaboration with the aquaculture industry to improve added value
- Extend the collaboration with the fishing industry
- Harmonise the cooperation between national and regional stakeholders in the coastal area of the Norwegian Sea (i.e. Water quality monitoring programs)
- Contribute to the goals of the UN Decade of Ocean Science for Sustainable Development

COASTWATCH - Continous monitoring along coast and model assimilation

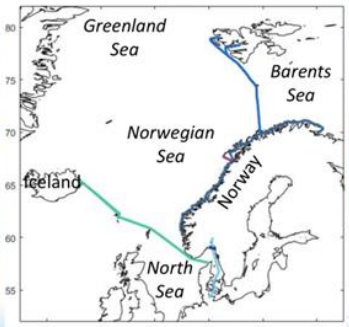
- Continous observations enable process understanding
- Will be used for assimilation in GCMs
- Both ocean predictions and reanalysis
- Traffic light system, risk assessment to oil spills, recruitment mechanisms in fish, dispersal studies etc
- Precise and continous descriptions of the physical and chemical environment are a necessary and important component in IEAs



2- OBSERVATION SYSTEMS // IRS - NORWEGIAN SEA

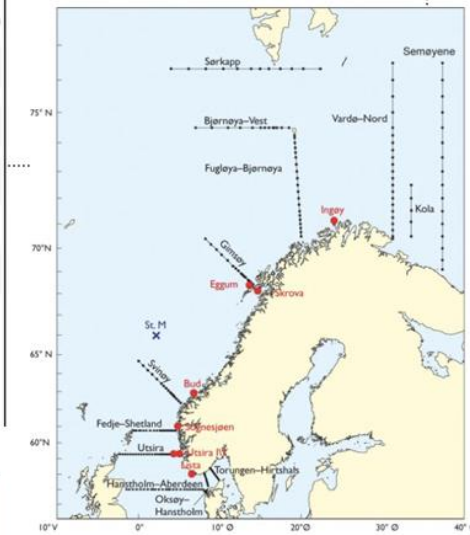
NIVA Norsk institutt for vannforskning · HAVFORSKNINGSINSTITUTTET · Akvaplan niva · Norwegian Meteorological Institute

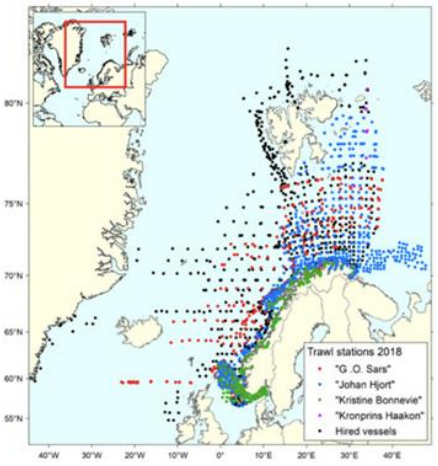
NorSOOP (2018-2023)

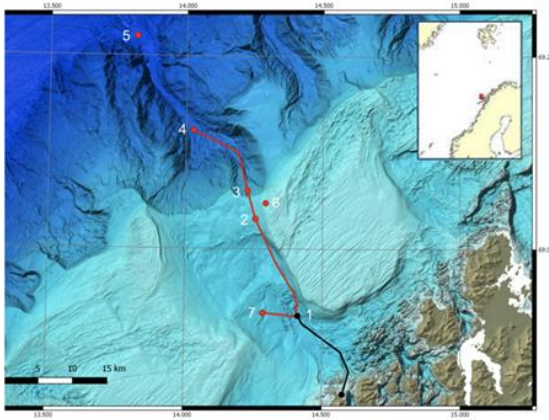


Kick off meeting
15 May 2018 12:00-18:00
NIVA Oslo

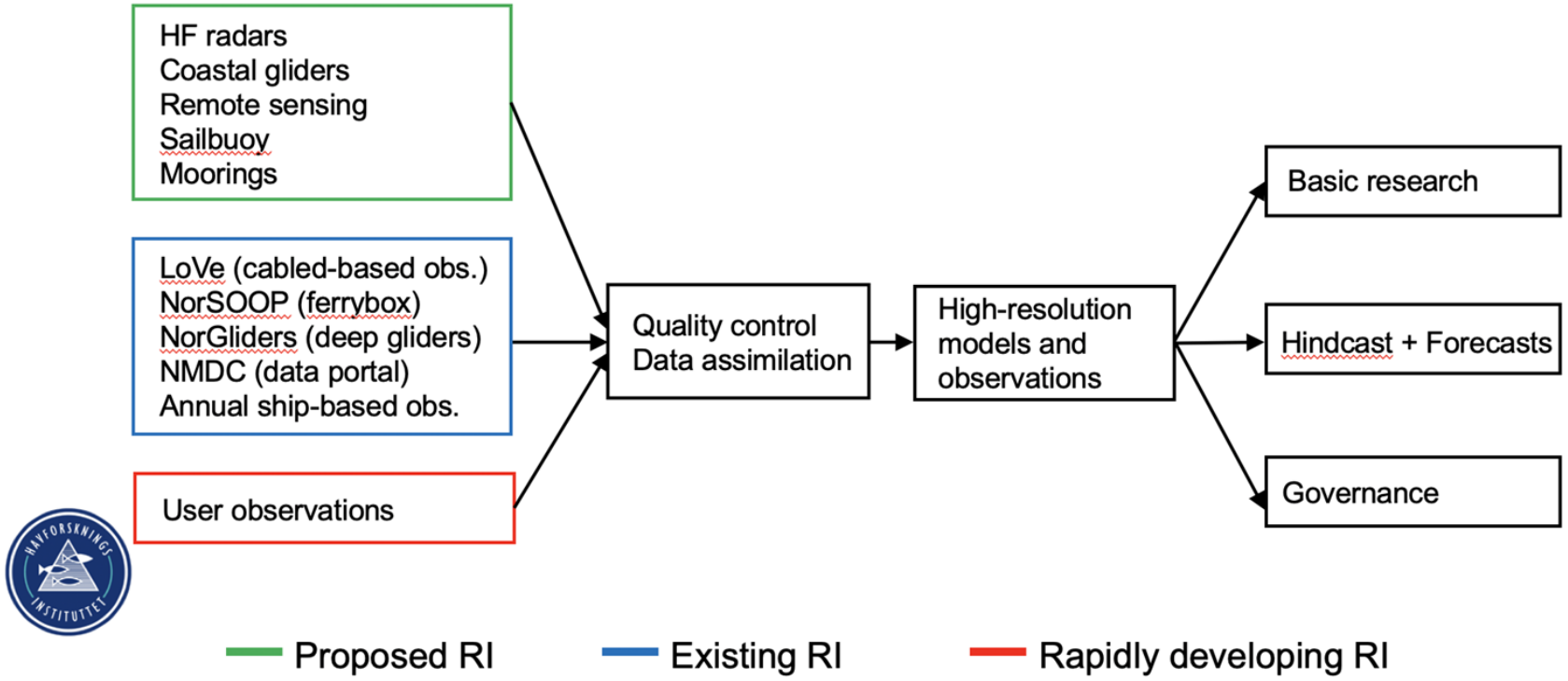
Coastal infrastructure







3 Combining Observations and Models // IRS - NORWEGIAN SEA



4- DATA SERVICES & PRODUCTS // IRS - NORWEGIAN SEA

DATA SERVICES AND PRODUCTS

DATA MANAGEMENT PLAN OF THE REGION (Data manager, interoperability, actions ?)

…

General:

EMODnet/CMEMS, Norwegian Marine Data Centre, NORSOOP database

4- USERS // IRS - NORWEGIAN SEA

USERS SURVEY

LIST OF USERS	CATEGORIES OF USERS (R&D, Societo-eco, Env. protection,Business & insurances, Policy maker, education and training, other (specify in comment)	COMMENTS, DESCRIPTION
Aquaculture industry	industry	Harmful algal blooms, environmental impact assessment, sea lice and viruses
Fishery Industry	industry	Regional distribution, shifts in fishing grounds, stock assessment
ICES community	Sustainable fishery	Stock assessment, quotas, population genetics
National ministries	Policy makers	
Public		
Norwegian Environmental Agency	Policy maker	Water quality monitoring, ocean acidification monitoring
IPBES	Intergovernmental Panel	Ecosystem and biodiversity drivers, anthropogenic and climate forcing
COMMENTS ABOUT THE USERS SPECIFICITIES, IF ANY, OF THE REGION		
...		

4- USERS // IRS - NORWEGIAN SEA

LINKS TO OTHER REGIONAL ACTORS, SYSTEMS AND OTHER RIs in the IRS *+ comments*

- NORSOOP
- NORARGO
- NOREMSO
- EMBRC
- Environmental monitoring program (Norwegian environmental ministry, pollution..)
- ICOS Norway
- Aquacosm
- Other national/EU projects…

CONCLUSION // IRS - NORWEGIAN SEA

STRATEGIC EVOLUTION OF THE REGION, THE IRS ? (Scientific scope ? Enlargement of the involved parties and institutions ? New data flow to harmonise ? Etc.)

1) FOR THE NEXT 12 MONTHS

- Identify additional observational efforts to include
- Continue defragmentation of the information obtained by the different observational methodologies
- Start process of integrating existing long term datasets across the region

1) FOR THE 4 YEARS OF PROJECT

- Set up a prototype of an early detection and warning system for harmful algae for the area (same as the Skagerrak/Kattegat IRS)
- Enhance the incorporation of ocean health information
- Develop a climate service based on high quality observations of ecosystems and environmental parameters

1) IRS LONG TERM OBJECTIVES

- Contributing to an integrated service combining observational efforts and modelling activity
- Providing services to the public, business etc.
- Sustain observational efforts applying different methodologies
- Information sharing in operational mode (right information to the users in the right time and manner)

TNA - VA // IRS - NORWEGIAN SEA

1 - LIST OF TNA IN THE REGION

Norferry/NORSOOP FerryBox

2 - LIST OF VA IN THE REGION

Norferry/NORSOOP Ocean Literacy and FerryBox data touchscreen console

3 - ADDED VALUE OF PROVIDING AND REQUESTING TA/VA IN THE REGION ?

Added value in the sense : will we be more “attractive” for TNA users ? Promote JERICO-RI within the regions and between regions ? Specificities of the region regarding TA/VA ?

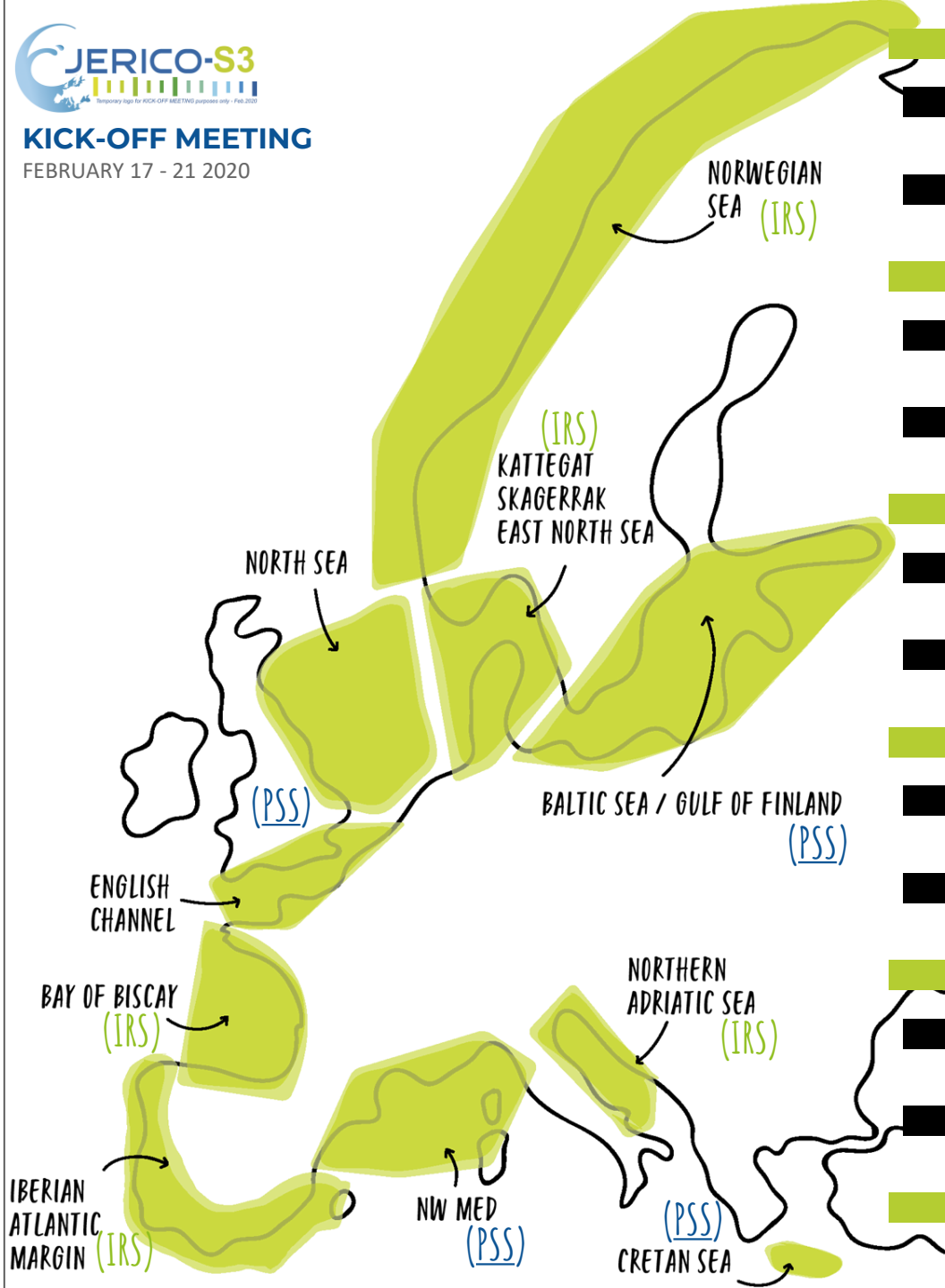
JERICO-S3

Temporary logo for KICK-OFF MEETING purposes only - Feb.2020

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 871153.
Project coordinator: Ifremer

- END of REGION -

ARW - Discuss & debrief



WP 3 – Integrated regional sites

WP Leader: Andrew King, NIVA, Norway
WP Co-Leader(s): Martin Pfannkuchen, IRB, Croatia

Where are the IRS?

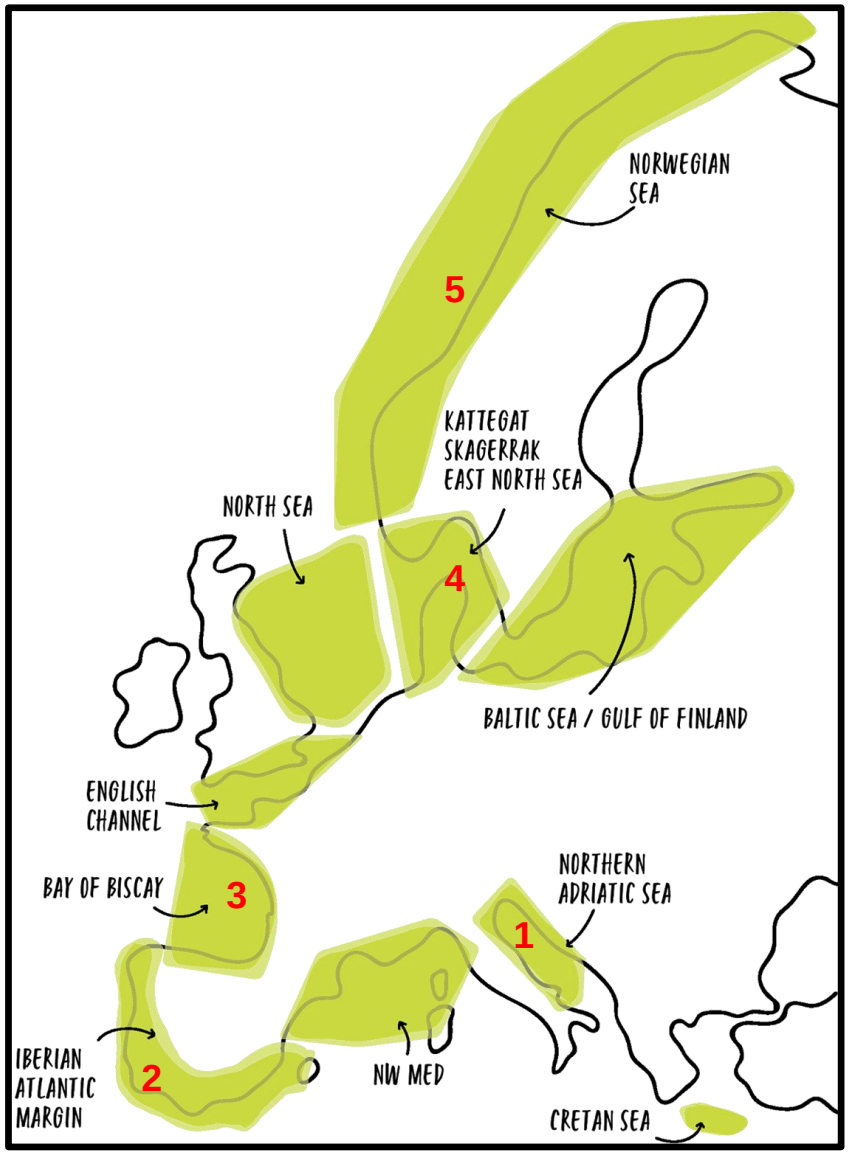
1) **Northern Adriatic Sea** (OGS (lead), IRB, CNR)

2) **Iberian Atlantic Margin** (IH (lead), PdE)

3) **Bay of Biscay** (AZTI (lead), IFREMER, CNRS)

4) **Kattegat-Skagerrak-Eastern North Sea** (SMHI (lead), NIVA, IMR, DMI, HZG)

5) **Norwegian Sea** (IMR (lead), NIVA, NORCE, FAMRI)



Who are the IRS?

1) **IRS leads:** primary contacts to WP leaders
2) **Discipline representatives:** regional specialists and links between IRS (and PSS) for pan-European perspective

WP 3 – Integrated regional sites

WP Leader: Andrew King, NIVA, Norway
WP Co-Leader(s): Martin Pfannkuchen, IRB, Croatia

Main objectives

⇒ Organize, harmonize, and integrate existing coastal observing activities and initiatives within ***and*** between regions

⇒ Direct coastal observing efforts towards the needs and requirements of local/national/regional levels, and ***coordinate/optimize at pan-European level for larger scale scientific and social issues***

⇒ What are the main outcomes ?

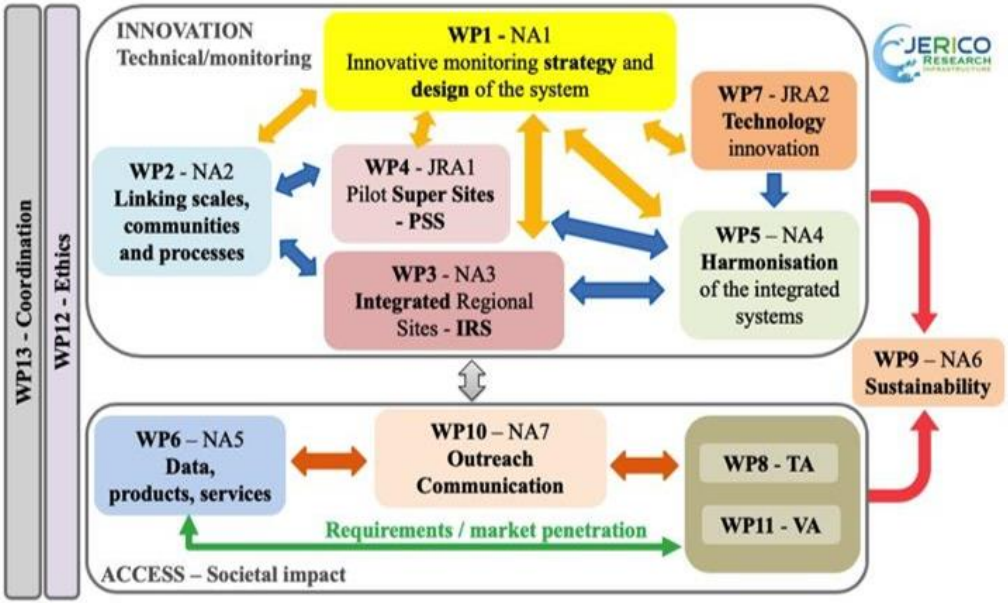
- Each region will have developed region-level strategic plans that include research themes, data harmonization/delivery, user/stakeholder needs and requirements, and sustained funding
- Inter-regional (IRS + PSS) interactions and harmonization will result in a more efficient and accessible JERICO-RI (strength in commonalities)
- Countries involved will be one step closer to ESFRI roadmap support

WP 3 – Integrated regional sites

WP Leader: Andrew King, NIVA, Norway
WP Co-Leader(s): Martin Pfannkuchen, IRB, Croatia

Internal (JERICO-S3) Interactions

- ⇒ **WP1**: Ensure coordination with JERICO-RI monitoring strategy and design
- ⇒ **WP2**: Identifying and cooperating with region-specific and pan-European communities (i.e., boots on the ground)
- ⇒ **WP4**: links and knowledge transfer with PSS
- ⇒ **WP5**: observing network/hardware harmonization and best practices
- ⇒ **WP6**: organize and deliver data from regional to pan-European data portals
- ⇒ **WP7**: implementation/demonstration of new observational equipment
- ⇒ **WP8/11**: Region-specific provisions relatec to access
- ⇒ **WP9**: Path towards sustained funding (ar again, boots on the ground)



Outside of JERICO-S3 Interactions

- ⇒ Region-specific EU, national, and regional ministries/initiatives/entities and European-level projects/infrastructures
- ⇒ EuroGOOS coordinated Regional Operational Oceanographic Systems (ROOS)

WP 3 – Integrated regional sites

WP Leader: Andrew King, NIVA, Norway
WP Co-Leader(s): Martin Pfannkuchen, IRB, Croatia

Specific objectives:

- Promote cooperation, integration, and development between countries adjacent to coastal observing regions (there are no boundaries in the ocean)
- Identify and develop strategies according to national and regional needs and requirements
- Interact and adjust based on adjacent PSS developments
- Provide framework for regional data management and accessibility
- Co-develop with WP9 a sustainable business/funding plan for next steps towards ESFRI

4 years time line:

D3.1. Initial analysis and summary of region-specific and region-wide monitoring strategies, and regional sustainability plans (IRB) (M7)
D3.2. Report on integration progress within and between IRSs (NIVA) (M26)
D3.3. Recommendations based on regional data handling and accessibility to WP6 and WP9 (IRB) (M32)
D3.4. Final analysis and summary of region-specific and region-wide monitoring strategies, and regional sustainability plans (IRB) (M38)
D3.5..Final report on integration within and between IRSs (NIVA) (M42)

1st year time line:

⇒ Work towards D3.1 has begun earlier this week and will continue until M7 delivery (together with WP1 and others in the scope of possible ESFRI application)
⇒ Individual IRS planning and some regional workshops related to harmonization and stakeholders

WP 3 – Integrated regional sites

WP Leader: Andrew King, NIVA, Norway
WP Co-Leader(s): Martin Pfannkuchen, IRB, Croatia

Difficulties, Gaps and Risks:

- Substantial regional cooperation and effort is required – everyone needs work together and as a team
- Links to national/regional users and stakeholders to help define observing system requirements and needs can be challenging
- National/regional policy and funding "landscapes" can change quickly, so strategy must be ready to adapt

Conclusions (what we hope we will have achieved):

- We will have asked a many questions related to regional activities and organization, and answers will help to define actions for the next 4 years and beyond
- The coordination and planning of each IRS will have improved individual IRS organization and observing portfolios (from sensors to data products), as well as the development and integration process at the pan-European level within and between IRS and PSS