

CINEA/EMFAF/2021/3.4.9

All Ocean Obs

Study for reporting obligations for Ocean Observation

Results for the IENWG14 meeting – 29th May 2024



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Partnership: 7 members



Project Duration: 15months (08/2022 – 11/2023)

Work Packages

SUPPORTING INFO

- WP1
- WP2
- WP4

PROTOTYPE

- WP3
- WP5
- WP7
- WP10

COMMUNICATION

- WP6
- WP8 (not detailed in presentation: dissemination)

COORDINATION

- WP9 (not detailed in presentation: project management)

WP1: Current Practice in Observation Reporting

- **Lead:** SMHI
- **Partners:** ICES, SHOM, GEOMAR
- **Deliverables:**
 - Report on similarities, differences, and the degree of detail between reports from different bodies or EU Member States
 - Table

Objectives:

Identify how observation programs (parameters and format) are currently reported across the EU Members States and worldwide.

The reporting refers to the action of communicating marine observations - data and information - from nations, organisations, institutes (data producers) to the regional, European and international bodies.

Output:

- overview of the current reporting procedures,
- compilation of the similarities and differences between reports from different bodies.

Main conclusion:

Landscape of marine observations' reporting procedure is complex and dense.

WP1: Current Practice in Observation Reporting

Reporting procedure under/to:	Reporting type	Parameter types	Area(s) of reporting
Maritime Strategy Framework Directive (MSFD)	Regulatory	An indicative list of elements exists. It was set out in Annex III and the list set out in Annex V, and by reference to the environmental targets established pursuant to Article 10- revised in 2017.	All marine waters within the European Union, including economic zones.
Water Framework Directive (WFD)	Regulatory	Quality Elements and parameters to detecti significant pressures on water bodies, and the most sensitive Biological Quality Elements for operational monitoring.	European River Basin, inland, transitional and coastal surface waters, as well as groundwaters.
Data Collection Framework (DCF)	Regulatory	Biological, environmental, economic, and social data. The parameters are Member States specific and defined in each National Workplan.	All fishing, recreational, commercial, and aquaculture in and outside of the European Union waters conducted by Member States.
EFCR	Regulatory	Location, vessel info, species caught and quantities, gear used, fishing operations, landings, etc...	Member States waters, 3rd party waters where Member States Vessels are operating.
RHCs (IHO)	Recommended / Voluntary	Coverage of new surveys, new technologies and /or equipment, new ships, crowdsourced and satellite-derived bathymetry, national policy, oceanographic activities.	Nordic HC, Baltic Sea HC, Mediterranean and Balck Seas HC, Arctic HC, Eastern Atlantic HC
OSPAR	International Agreement	Components falling under the 6 CEMP thematic monitoring programmes (themes A: Ocean Acidification, B: biodiversity and ecosystems, E: Eutrophication, H: Hazardous substances, O: offshore oil and gas industry and R: radioactive substances).	Marine Waters (5 regions: Arctic waters, Greater North Sea, Celtic Seas, Bay of Biscay and Iberian Coast, Wider Atlantic).
HELCOM	International Agreement	Biological diversity; non-indigenous species; commercially exploited fish and shellfish; marine food webs; human-induced eutrophication and its effects such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters, sea-floor integrity; contaminants; marine litter and underwater noise.	Whole Baltic Sea, including inland waters, water of the sea itself and the sea-bed.
UNEP-MAP	International Agreement	dumping protocol, land-based sources protocol, Specialy Protected Area protocol, prevention and emergency protocol, offshore protocol, hazardous wastes protocol and Integrated Coastal Zone Management protocol.	Maritime waters of the Mediterranean Sea Proper, including its gulfs and seas, bounded to the West at the entrance of the Straits of Gibraltar, and to the East by the southern limits of the Straits of Dardanelles.
IOC-UNESCO	Regulatory	Depending on the parameters being reported, different reporting processes exist according to components.	Global
OA-ICC	Recommended / Voluntary	Parameters related to ocean acidification under the following categories: chemical information, experimental and biological information.	Global
WMO	Regulatory	Physical Essential Ocean Variables	Global
GOOS	International Agreement+ Recommended / Voluntary	Physical, chemical, and biological Essential Ocean Variables (EOVs).	Global
OceanOPS	International Agreement + Recommended / Voluntary	Physical, chemical, and biological Essential Ocean Variables (EOVs).	Global

WP2: Standards for observation

- **Lead:** GEOMAR, SHOM
- **Partners:** SMHI, SSBE, ICES
- **Deliverable:**

Summary report on the use of global, European or sea-basin standards in observation of physical, chemical, biological, geological or bathymetrical parameters

Objectives:

Identification of Standards, best practices and guidelines followed to sample and measure/analyse physical, biogeochemical, biological, cross-disciplinary and bathymetric/geological parameters used by the EU ocean observing community and internationally.

Outputs:

- 44 Standards and 110 best practises have been tackled
- All GOOS Essential Ocean Variables (EOVs) and their sub-variables were considered.

Main conclusion:

Useful to the wider community if Standards and best practices for all GOOS EOVs + bathymetric/geologic parameters were made publicly available.

WP2: Standards for observation

some critical ocean parameters / Essential Ocean Variables do not yet have standards to follow or even updated best practices widely accepted by the EU ocean observing community.

a couple of EOVs have multiple inconsistent best practices which lead to no better results

→ the monitoring and reporting of several EOVs very heterogeneous and hard to compare between the various EU Member States.

Type of observations	Standards	Physical	Biogeochemical	Biological	Cross-disciplinary	Bathymetrical/geological
Number of EOVs		11	8	11	3	
Tackled sub-variables			19			2
Standards (n)		9	17	14	16	3
EOVs/variables with standards		55%	58%	91%	100%	100%
Endorsing entities		ISO, CEN, WMO, IEC, BS	ISO, CEN, DIN, UNE, BSI, ASTM	CEN, ISO, ASTM, DIN, UNE, HELCOM, RAC/SPA, UNEP/MAP	ISO, IEC, ANSI, ASA	IHO, ISO, CEN, DIN
EOVs without standards		5	4	1.5	0	0
Scope of standards	International	✓	✓	✓	✓	✓
	Regional	X	X	✓	✓	✓
	National	X	X	X	✓	✓
Availability of Standards	Available online but with fees	✓	✓	✓	✓	✓
	Available online for free	X	X	✓	✓	✓
	Not available online	X	X	X	X	X
Year of publication of standards	Before 2013 (> 10y)	33%	47%	21%	19%	33%
Societal needs covered by the existing standards	Climate	★	★★		★	
	Food security		★★	★★★	★	
	Maritime safety	★★★			★★	★★★
	Ocean health	★★	★★	★★★	★★★★	
	Operational needs	★★★			★★	★★★
	Vulnerable communities		★★	★★★		★★

WP3: Reporting Template for observation campaigns

- **Lead:** EuroGOOS
- **Partners:** SHOM, SMHI, ETT
- **Deliverables**
 - A practical template for reporting observation campaigns
 - A detailed instruction manual

Objectives:

Develop a practical and dynamic template for reporting observation campaigns and provide an instruction manual for an easy reporting.

Outputs:

- The information needs from different bodies (e.g., maritime and environmental agencies, meteorological, hydrological or oceanographic institutes) with regards to the reporting obligations identified from WP1 were considered.
- Format standards, controlled vocabularies, and other features were included to help interoperability
- Prototype reporting template includes sections:
 - **Basic information (organisational)** - points of contact, etc.
 - **Basic information (campaign)** - campaign dates and geographical location
 - **Regulatory or other context** - contribution to EU legislation, RIs, etc.
 - **Campaign vessel information** - details of vessels used in the campaign, if any
 - **Deployments, maintenance and retrieval of fixed and autonomous platforms** - planned activity relating to different platforms, if any. Opportunities for collaboration can be identified.
 - **Fixed sampling stations/locations and transects** - sampling of existing established stations or transects.
 - **Variables and data details** - The type of observations that will be made, detailed information on specific variables also possible.
 - **Available opportunities for additional measurements/deployments** - if available, eligibility details, contact information.
 - **Other information** - campaign cost/funding, fossil fuel use

WP4: Data Collection

- Lead: ICES
- Partners: SHOM, SMHI, (ETT)
- Set of observation plans from each of the two non-landlocked selected EU Member States
 - Planned marine observations from relevant French and Swedish Competent Authorities (2022 reference year)
 - National implementation plans for the Data Collection Framework (DCF), the Marine Strategy Framework Directive (MSFD), Water Framework Directive (WFD) etc.

Objectives :

Collect a set of ocean survey plans from two non-landlocked selected EU Member States (France and Sweden) and catalogued their planned marine observations from relevant French and Swedish Competent Authorities using 2022 as the reference year.

Outcome:

- Main findings include that the approach varies between Member States in the implementation of monitoring programmes (highly devolved in France, mainly centralised in Sweden).
- In both countries the obligations to EU Directives and Regional Sea Conventions are fully or mainly fulfilled through these monitoring plans.

Challenges:

- Even for national experts working within their own structures, it is not an easy task to identify and collate information on monitoring programmes (it is siloed)
- Regional (within a country) implementation will inevitably lead to a less harmonized approach and application of standards
- National/regional plans not in English

WP5: Prototype on-line map viewer and design of a web page

- Lead: ETT
- Partners: EuroGOOS, SSBE, SHOM, SMHI
- Prototype online map viewer / webpage to host the portal and disseminate the project outputs

M2

Activity

- Analysis of state of the arts
- Development of the infrastructure based on the WP3 form draft
- Development of the mockup for the first release

M7

Activity

- First release of the web portal
- First version of the database with not relational structure
- Analysis of interface usability and responsiveness to WP3 form draft

Feedback

- Improvement of the interface
- Alignment of the web form and WP3 form

M9

Activity

- Second release of web portal
- Consolidation of database not relational structure
- Analysis of interface usability and responsiveness to WP3 form draft
- Usability and responsiveness testing via workshop of experts

Feedback

- Web portal in line with experts needs
- Improvement in user interface and usability

M12

Activity

- Third release of web portal
- Alignment of web form with WP3 form draft
- Improvement of user interface in line with EU web guidelines

Feedback

- Alignment of the web form and WP3 form
- User usability improvement in order to allow missions draft management
- Web interface in line with the expectations

M14

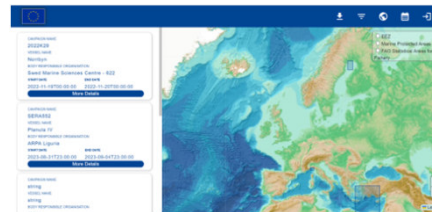
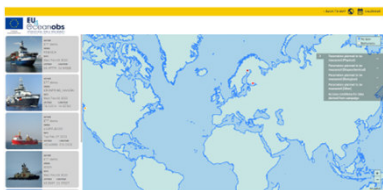
Activity

- Fourth release of web portal
- Alignment of web form with WP3 form draft
- User mission draft management

Feedback

- Need to switch to relational database for improved maintenance and development
- Reduction of information required in the form

<https://alloceanobs.s4oceandata.eu/portal/#/home>



WP5: Prototype on-line map viewer and design of a web page

European Commission | ALL OCEAN OBS

Login

MISSIONS | PLANNER

IBTS 2023
Feb 14, 2023 - Mar 14, 2023

Vessel name	min lat/lng
Thalassa	48.7726 -2.1447
	max lat/lng
	52.6474 1.9946

[View Mission >](#)

IBTS q1 14 dgr
Feb 20, 2024 - Mar 4, 2024

Vessel name	min lat/lng
Argos	0 0
	max lat/lng
	0 0

[View Mission >](#)

SMHI feb exp
Feb 7, 2024 - Feb 18, 2024

Vessel name	min lat/lng
Argos	0 0
	max lat/lng
	0 0

[View Mission >](#)

Leaflet

WP5:

Prototype on-line map viewer and design of a web page

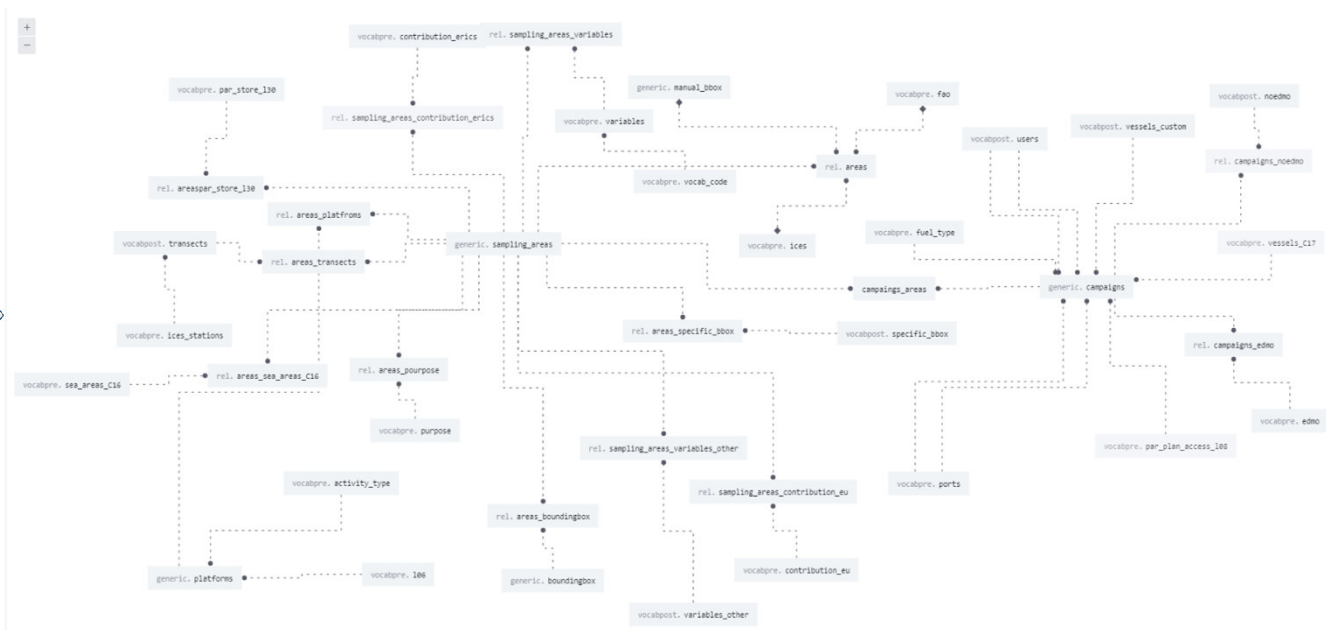
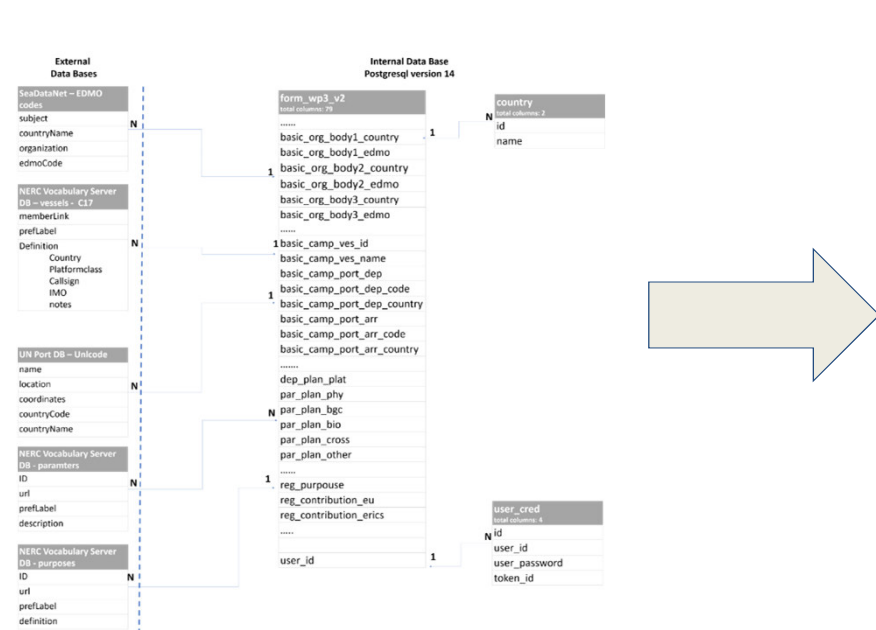
Database at releases 1,2,3,4

- Non relational database
- One tabel with all the campaign information
- Vocabularies harvested from external databases

Database schema for hand-in release

Developed after authority feedbacks at M14 release

- Fully relational database
- Vocabularies hosted in the database and customisable
- Each campaign is connected to multiple sampling areas
- Relation between Campaign - Sampling Areas - Measurements



WP6: Stakeholder consultation and workshop

- **Lead:** SSBE
- **Partners:** EuroGOOS
- **Deliverables:**
- Draft report on the scope of the reporting template
- List of selected representatives responsible for ocean observation reporting
- 1-day WS
- Collection of feedback from WS participants
- Summary of the stakeholder consultation

Objective:

Collect feedback on the draft reporting template for observation campaigns and online map viewer.

Outputs:

- **EMD workshop** (25 May 2023, Brest) raised awareness of the need for ocean observation sustainability with stakeholders. Co-organised with several ERICs and projects, EuroGOOS and EMODnet. Panelists included EC DG MARE, National (France), EU and international perspectives.
- **Stakeholder online workshop** (20 June 2023, online) - feedback collected from key identified stakeholders (coastal Member States, National representatives from MSFD, Data Collection (DCF), Hydrographic Service, and European GOOS NFPs) on the draft reporting template and pilot map viewer
- **Stakeholder feedback survey** (June 2023, circulated after the workshop on 20 June and extended to 31 August 2023).
- An **article** was **published on the EC Maritime Forum** on the 9th of October 2023 and workshop participants were informed.

WP7

Scale-up of the adoption of the reporting template

- **Lead:** EuroGOOS
- **Partners:** SSBE, ICES, SHOM, SMHI, ETT, GEOMAR
- **Duration:** M11-M13 (Jul '23 - Sep '23)
- **List of recommendations**

Outcomes

List of recommendations on how to adopt template for all EU MS and ensure template's usability

Key inputs and milestones

- Development of template and viewer (WP3 and WP5)
- Stakeholder awareness workshop at EMD2023 (WP6)
- Stakeholder survey (WP6)
- Recommendations on future rolling out and scaling up

Recommendations presented across 3 aspects:

- Implementers and users of the template
- Technical improvements and user-friendliness
- Stakeholder engagement and communication

WP10: Transition and Handover details at the end of the contract

- **Lead:** EuroGOOS
- **Partners:** ETT
- **Duration:** M15-M16 (Nov '23 - Dec '23)
- **Output:** Handover package

Objectives

- To provide an adequate overview of the state of play at the end of the contract.
- To hand over the products and services developed under the contract in progressive, secured and orderly manner to the Contracting Authority or any party designated by the Contracting Authority.

Outputs

- Functioning webpage online map-viewer handed over to the Contracting Authority (M16)
- Complete set of instructions handed over to the Contracting Authority (M16)

EC guidance on potential launch of tool necessary for operational aspects:

- Privacy policy (needed before any launch is possible)
- Policy for user management and moderation of entries
- Hosting considerations (including resources)
- Communication strategy

Any questions?



A satellite image of the Arctic region, showing a large, white ice sheet covering the central part of the continent. The surrounding landmasses are visible in shades of brown and tan, with some blue water bodies. The text "Thank you !" is overlaid in the lower right quadrant of the image.

Thank you !