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1. Introduction

Eurofleets+ facilitated open free of charge access to a unique fleet of state-of-the-art research vessels, AUVs and ROVs from European and international partners which has been arranged by competitive transnational access (TA) calls. A Data Policy has been defined and adopted and Eurofleets+ project applies the FAIR and Open research data principles of the H2020 framework. It aims at making Eurofleets+ research data to be findable, accessible, interoperable and reusable (FAIR) and to adopt open research data access. Therefore, marine data management is an integral part of the Eurofleets+ approach and is implemented in synergy with SeaDataNet, a leading pan-European infrastructure for marine data management, involving NODCs (National Oceanographic Data Centres) as core partners.

During TA cruises, the following observations are gathered:

- en-route (underway) data from fixed sensors, such as navigation, meteo sensors, and salinometer;
- human operations, such as CTD profiles, and also including samples (water, sediment, and biota) which are partly processed at the onboard laboratories and partly later at shore;
- timeseries by sensors deployed on frames, ROVs, AUVs or floats.

The NODCs give guidance and support for arranging that metadata and data from the TA cruises are becoming populated in the pan-European SeaDataNet data management infrastructure, which also feeds into EMODnet, CMEMS, and global marine data exchange infrastructures. Metadata and Data are also published on the Eurofleets+ EVIOR platform to give users e-access to underway and operational information and data from sailing research vessels. It also gives discovery and public access to research data sets as collected and processed by research teams during the TA funded cruises.

Overall, Eurofleets+ project funded 28 projects distributed over 23 Transnational Access (TA) cruises. DMPs were created prior to almost all the cruises with detailed information on: the data the research is generating, how to ensure its curation, preservation and sustainability and what parts of that data will be open. None of the PIs opted-out from Open Data reflecting their will to share openly their research data despite embargo periods have been requested for a majority. After the cruises, the Cruise Summary reports (CSR) were published with the inventory of measurements and samples collected at sea to SeaDataNet on the CSR platform which gives a unique and persistent identifier to the cruises. After the cruise, the data are gathered and deposited to the assigned Responsible Data Centers (i.e. HCMR, OGS, RBINS) for validation, curation and publication on European oceanographic

data repositories (i.e. EMODnet Data Ingestion Portal, SEANOE, SeaDataNet CDI Service), in accordance with data usage license and moratorium defined in the DMP. A total of 164 interdisciplinary datasets have been generated during the 28 cruise projects with 66% of them handed to the RDCs for preservation and curation. The project cruises data management resulted in almost half of the generated datasets to be Findable and soon Openly Accessible (i.e. after the moratorium periods) and one third of the datasets being Interoperable and Re-usable also in a short term period (i.e. after the moratorium periods). The project highlighted the complementarity between the scientific expertise providing quality data and the experience of the NODCs of leading data stewardship in order to produce trustworthy open research data.

2. Cruise data management approach

Eurofleets+ project applies the FAIR and Open research data principles of the H2020 framework. Three NODCs (i.e. HCMR, OGS and RBINS) act as data steward to support PIs in their task to meet their commitment of making the cruise data FAIR and open. They give guidelines and guidance for planning the data management, they assist PIs in providing necessary data and metadata collected during the cruise to ensure the data curation, preservation and re-use. The TA cruises are assigned evenly amongst the three RDCs depending on the data types and covered area. Bathymetric data are assigned to HCMR who has more experience with the data type. The RDCs follow closely the cruise data management in close collaboration with the PIs.

To access the TA program, the Principal Investigators needed to write a Data Management Plan (DMP) to provide information: on data the research would generate, on how to ensure its curation, preservation and sustainability, to define what parts of the data will be open. As the creation of the DMP is a dynamic process, a DMP Roadmap online tool (<http://dmp.ef-ears.eu>) has been set up allowing PIs to update the DMP during the data life cycle. Guidelines have been provided to help them to complete the DMP. A first DMP version needed to be described to apply for the TA cruise programmes. When the cruises are granted, PIs needed to complete the DMP in full, at the latest two weeks before the cruise. The full DMP is reviewed by the assigned RDC who evaluates whether the DMP complies to the FAIR principles. The RDC asks for updates when necessary.

During the cruises, data and metadata are collected and gathered by the PIs. Within two weeks after the cruises, PIs need to publish the Cruise Summary Reports (CSR) with the inventory of measurements and samples collected at sea. The submission must be performed on SeaDataNet on the CSR service platform which gives a unique and persistent identifier to the cruises. Assigned RDCs give necessary

support to PIs to proceed to the CSR submission and can, if needed, submit the CSR on behalf of him/her.

Within two months after the cruise, PIs provide the Cruise Report to the Eurofleets+ Evaluation Office at AWI. The Cruise Report is a key document outlining the data actually generated which may differ from the planned data collection outlined in the DMP. RDCs rely on the Cruise Report to monitor the completeness of transferred data as well as to gather metadata information necessary to format data and metadata according reference standards.

Within two months after the cruise, PIs proceed to the deposit of collected data files and metadata. Processed data and lab analyses results, may require additional time before they become available, and should be processed when ready, whether an embargo period has been requested or not. PI's are requested to deposit the data by submitting to the EMODnet Data Ingestion Portal (DIP) which plays a role in Eurofleets+ as a central mailbox. Fig 1a shows the main route for data deposit and ingestion. Data Originators submit the data to EMODnet DIP, where assigned RDCs complete the submission for "as-is" publication (Phase I). The data is then further elaborated, where possible, (with validation and harmonisation) by the assigned RDC to generate CDIs, Common Data Index entries, published on the SeaDataNet service as Phase II. Phase II requires the RDCs to format data according to the SeaDataNet standard transport format, harmonizing data towards SeaDataNet Common vocabularies and formatting metadata following the ISO 19139 Schema of the CDI format. This can be performed either by integrating data and metadata in NODC central database from which a common workflow is already in place, or to make use of SeaDataNet Softwares NEMO and MIKADO to perform the data and metadata formatting respectively. It requires first that all necessary metadata and data to be provided is complete and consistent. Then work is required to proceed to data population of the infrastructure. An automated workflow is then applied to feed EMODnet lots, EurOBIS and CMEMS. The CDIs as adopting ISO standard and Common vocabularies comply with the FAIR principles.

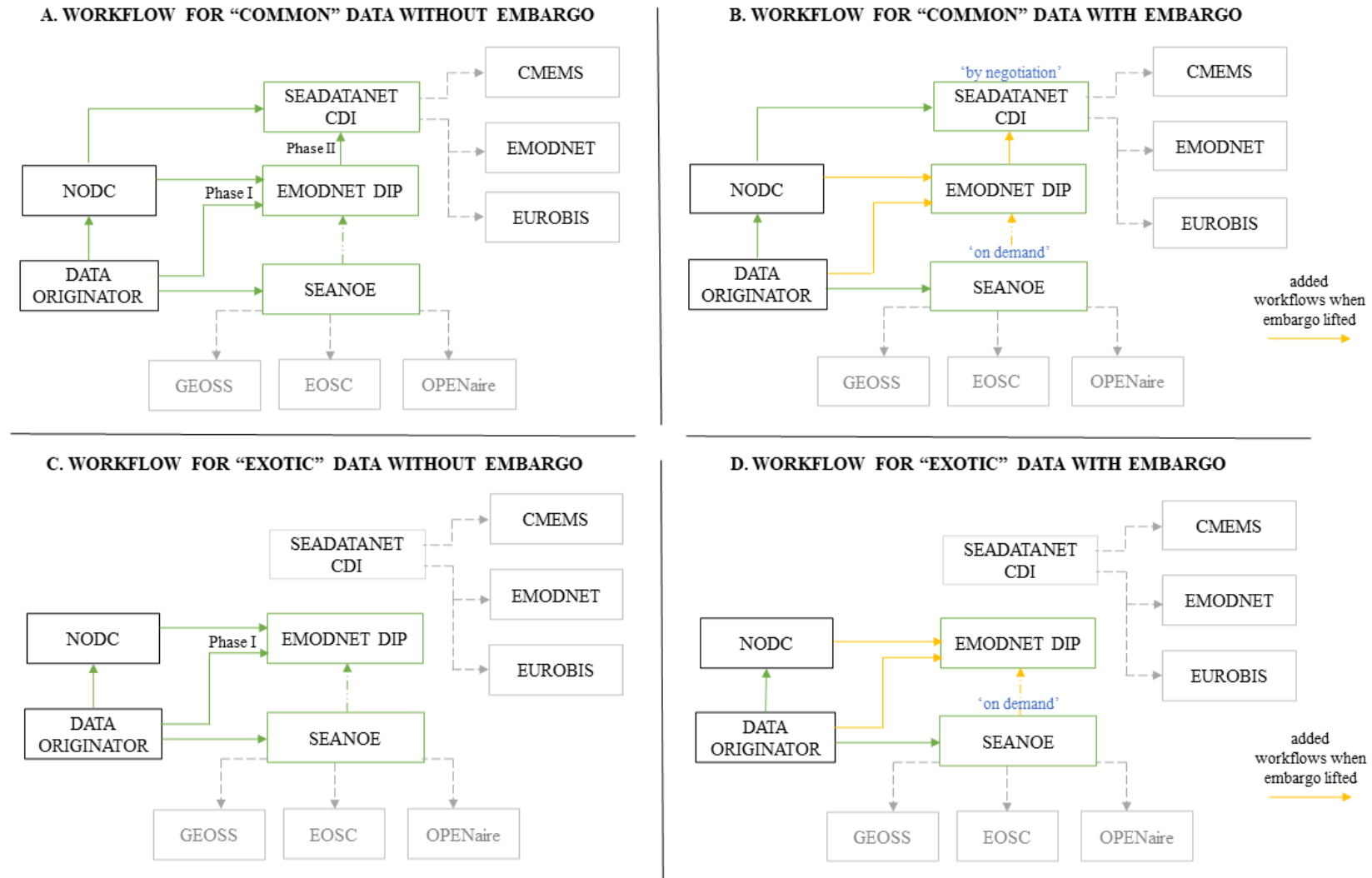


Figure 1. Eurofleets+ data ingestion workflows

The ingestion workflow may however vary according to the data type and the presence of embargos. Only 'common' oceanographic and marine data types can be ingested into the SeaDataNet CDI Service. 'Exotic' data types such as eDNA or pictures do not fit into the CDIs repository. In such cases, phase II cannot be achieved, and the submitted data remain 'as is' in EMODnet DIP phase I. For data under embargo, as shown in Fig 1b, data originator must transfer the data to the assigned RDC who will elaborate CDIs with a restrictive access ('under negotiation') during the embargo period. When the embargo ends, the RDC change the access to open. SEANOE (SEA SciENtific Open data Edition) is used by SeaDataNet to facilitate scientists to publish research data in the field of marine sciences as citable resources. It has been suggested in Eurofleets+ as service to publish 'exotic' data and/or to get a DOI for PIs who would wish for one. SEANOE allows to ask for an embargo period by setting data 'on demand' during the embargo period. It is automatically lifted when date is expired. There is a semi-automated harvesting of SEANOE publication from EMODnet Ingestion. SEANOE is also harvested by GEOSS, EOSC and OPENaire. Fig 1c and 1d shows the workflows for 'exotic' data with and without embargo.

PIs are allowed to also publish their data/metadata on other open access repositories, either on general scope repositories such as PANGAEA or community specific repositories (e.g. ENA, Ecotaxa) but the project requirement is clear that it does not fulfill the project requirements and only submissions on SeaDataNet infrastructure are considered as fulfilling the agreement.

To support the PIs in the process of managing their cruise data, Data Management Guidelines have been delivered and presented during a webinar as well as during individual meetings with PIs. It explained how and when: to complete the DMP, to submit the CSR and to proceed to the data submission. The guidelines gave also a complete list of data and metadata to provide in order to support data curation for validation and harmonisation of data against standard vocabularies.

The Eurofleets+ RDCs ensure data stewardship throughout the Eurofleets+ project life to ensure that data of trustworthy quality are delivered. The RDCs are experienced NODCs and core partners of SeaDataNet used to work on assembling, harmonising and making marine data, products and metadata more available to public. In the Eurofleets+ project, this data curation process represented a major part of the work performed by the RDCs.

Their tasks are for each of the cruises:

- to ensure DMPs, CSRs and data/metadata are delivered in time according Eurofleets+ timeline,
- to review the DMPs and give guidance for updates to support the PIs in reaching FAIR,

- to give support and guidance for the publication of CSRs, including submitting CSRs on behalf of the PIs when needed,
- to give support and guidance for deposit and submission of collected data to the target repository including proceeding to the submissions on behalf of PIs,
- to review and validate the publication of data submitted to EMODnet DIP to achieve Phase I,
- to check for transferred cruise (meta)data completeness, consistency and quality,
- to harmonize data following reference standards and common vocabularies for publication of CDIs (Phase II).

The RDCs executed these tasks in close collaboration with PIs, keeping contact by e-mails exchanges or virtual meetings when needed.

As Eurofleets+ project adopted the FAIR and Open research data principles of the H2020 framework, indicators for data FAIRness have been defined to support the follow-up and monitoring the data management progress. A first version of indicators description was published in D.4.12. Adaptations of the indicators are made to capture the implementation of the concluding project data management approach. Version 2.0 of the indicators description is reported in Table 1.

Monitoring indicator	Description <i>(Descriptions for FAIR, nurtured by FORCE11 and published in Nature Scientific Data in 2016¹ are reported in italic)</i>	Achieved in Eurofleets+ project when
1.1 Data is complete	Data deposit is complete: lot of collected datasets are completely transferred to Data Centers or published on target repositories	Number of datasets and volume announced in DMP and Cruise Report match with published ones. If numbers and/or volumes do no match, discrepancies should be justified. Collected datasets are completely transferred or published on EMODnet DIP, SEANOE or SDN CDI Service.
2.1. Data is findable	<p><i>F1. (meta)data are assigned a globally unique and persistent identifier</i></p> <p><i>F2. data are described with rich metadata (defined by R1 below)</i></p> <p><i>F3. metadata clearly and explicitly include the identifier of the data it describes</i></p> <p><i>F4. (meta)data are registered or indexed in a searchable resource</i></p>	Metadata and data are published on EMODnet DIP, SEANOE or SDN CDI service which meet F. principles
2.2. Data is openly accessible	<p><i>A1. (meta)data are retrievable by their identifier using a standardized communications protocol</i></p> <p><i>A1.1 the protocol is open, free, and universally implementable</i></p> <p><i>A1.2 the protocol allows for an authentication and authorization procedure, where necessary</i></p> <p><i>A2. metadata are accessible, even when the data are no longer available</i></p> <p>Data comply with Open research data principle underpinning scientific research results that has no restrictions on its access, enabling anyone to access it.</p>	<p>Data is published with no restrictions and no embargo on EMODnet DIP, SEANOE or SDN CDI services which meet A. principles.</p> <p>A moratorium is not a restrictive access 'per se' but as data is temporarily not accessible during the embargo, data under embargo is considered here not open until the embargo's end.</p>

¹ Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3**, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>

2.3. Data is interoperable	<p><i>I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.</i></p> <p><i>I2. (meta)data use vocabularies that follow FAIR principles</i></p> <p><i>I3. (meta)data include qualified references to other (meta)data</i></p>	Data is harmonized and published on SDN CDIs service which meet I. principles.
2.4. Data is re-usable	<p><i>R1. meta(data) are richly described with a plurality of accurate and relevant attributes</i></p> <p><i>R1.1. (meta)data are released with a clear and accessible data usage license</i></p> <p><i>R1.2. (meta)data are associated with detailed provenance</i></p> <p><i>R1.3. (meta)data meet domain-relevant community standards</i></p>	<p>Data is harmonized and published under an open license on SDN CDI service which meet R. principles.</p> <p>A moratorium is not a restrictive access 'per se' but as data is temporarily not accessible during the embargo, data under embargo is considered here not re-usable until the embargo's end.</p>

Table 1: FAIRness implementation indicators v2.0 and how to achieve them in the scope of Eurofleets+ project.

All information, metadata, and data related to the TA cruises are also published and can be found by users at the EVIOR portal (<https://evior.eurofleets.eu/>) which provides six services for different aspects of the cruises and their collected metadata and data. It includes the Eurofleets+ Cruise Data Sets Catalogue which reports all cruises datasets and their publication status on the target repositories.

As mentioned, scientific embargoes are taken into account; however, it is strived for transfer of metadata and data as soon as available and still within the duration of the Eurofleets+ project, so that resources can be spent for the data curation and publishing.

3. Synthesis of the TA cruises data management

1. DMP and CSR

Overall, Eurofleets+ project funded 28 projects distributed over 23 TA cruises. The cruises were firstly scheduled to take place mainly in 2021 and 2022 but due to the COVID pandemic, 5 cruises were postponed to 2023.

The cruises were assigned as presented in Annex 1 between the 3 RDCs. HCMR was leading the DMPs and CSRs follow-up for 8 cruises, OGS for 10 cruises and RBINS for 9 cruises. Regarding the data curation, HCMR was responsible for the datasets of 13 cruises, OGS and RBINS both for 11 cruises.

All cruise DMPs have been completed except for the two latest cruises POSEIDON and ERODOTO departed in June and July 2023. Almost all DMPs were of very high quality. Updates were asked when they were not complete and/or detailed enough. Reoccurring missing information in the DMP were on:

- standardization process and use of common vocabularies,
- quality checks and quality flags schema foreseen,
- limited lineage (data processing) information.

And these were most of the time the pieces of information that most PIs did not provide when handing the data for curation and which needed to be reminded.

The CSRs needed to be submitted within 2 weeks after the campaign. Most of the CSRs were submitted on time. Reminders for submission have been sent to the others and support given to assist the submissions when needed. All CSRs have been eventually published on SeaDataNet CSR front-end. All the links to the published CSRs are reported in the Eurofleets+ Cruise Data Sets Catalogue.

2. Data handling

Datasets

Twenty-eight TA cruises were funded giving the opportunity to the scientific crews coordinated by 28 PIs to collect research data and generate a very large amount of data and metadata. We consider here a “dataset” as a “uniform set of data of same type and same format structure collected under one project cruise”. A dataset can be composed of a single file or a series of data files (of same type and same format structure) and may be of any size. It can be generated automatically from sensors deployed or on board of the vessels, or being the results of lab analyses performed on collected samples. It can include raw or processed data. During the Eurofleets+ project, 164 datasets generated over the 28 TA cruises as shown in Fig 2 were recorded. This recording is based on the number of received datasets (by the 3 RDCs) and the number of collected datasets reported in the Cruise Report submitted by the PIs after the cruises. Therefore, this number may vary with the reality; only the PIs and crew scientists know what they actually collected. Hence, some datasets may result in poor quality and may not be of value to be published. Some devices may not have been functioning properly resulting also in no exploitable values. Therefore, our count may be an estimation but give already a measure for quantification of the data management progress.

These 164 datasets are distributed between the 3 RDC for validation and further management.

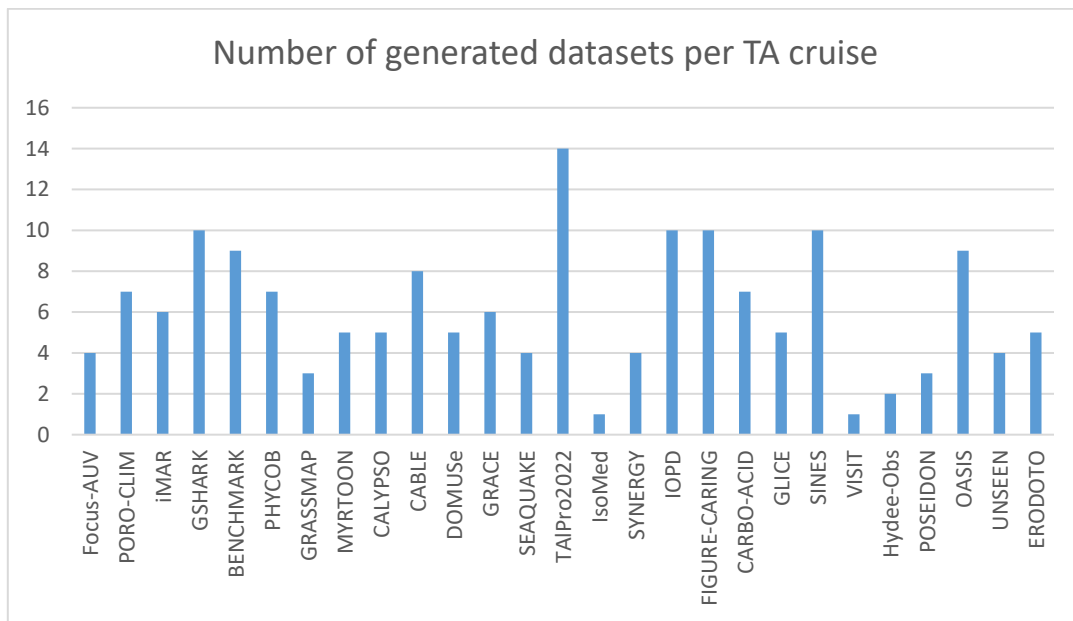


Figure 2. Number of recorded datasets generated per TA cruise

Despite the datasets being collected by a large variety of instruments sometimes giving insight into many cross-disciplines (e.g. analysed water sampling can support studies on nutrients, eDNA species, pollution, etc...), we can categorize the collected datasets according the project purpose which often fits into one discipline. Fig 3a shows how the 164 datasets can be classified over oceanographic disciplines. Datasets fit mostly and evenly into biochemistry (e.g. nutrients, acidification parameters), biological (e.g. abundances, taxonomy, eDNA), physico-chemical (e.g. CTD with various sensors) and geophysical disciplines (e.g. bathymetry, seismic). Physical oceanography (mainly captured by current profilers) is slightly less represented and Atmospheric (with meteorology), Terrestrial (with sediment and cores samples) and Human activities (with pollution in microplastics) are in minority. Some PIs provided already files with cruise and samples metadata while the lab analysis were being performed. More than half of the total number of datasets covers the North East Atlantic Ocean (33%) and Mediterranean Sea (29%) as shown in Fig 3b.

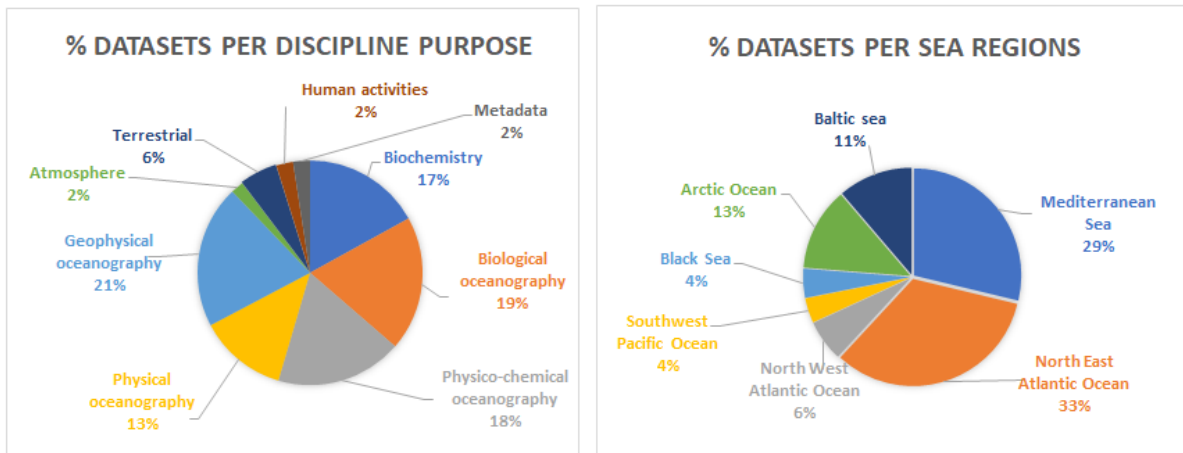


Figure 3. Proportion of the project generated datasets per discipline (3a) purpose and per sea regions (3b).

Within 2 months after the cruise, collected datasets should be deposited i.e. transferred to assigned RDC’s or published on dedicated repositories (EMODnet DIP, SEANOE, SeaDataNet CDI Service). Regardless of the presence of an embargo, data should be provided as soon as they become available given the needs for lab analysis or processing steps.

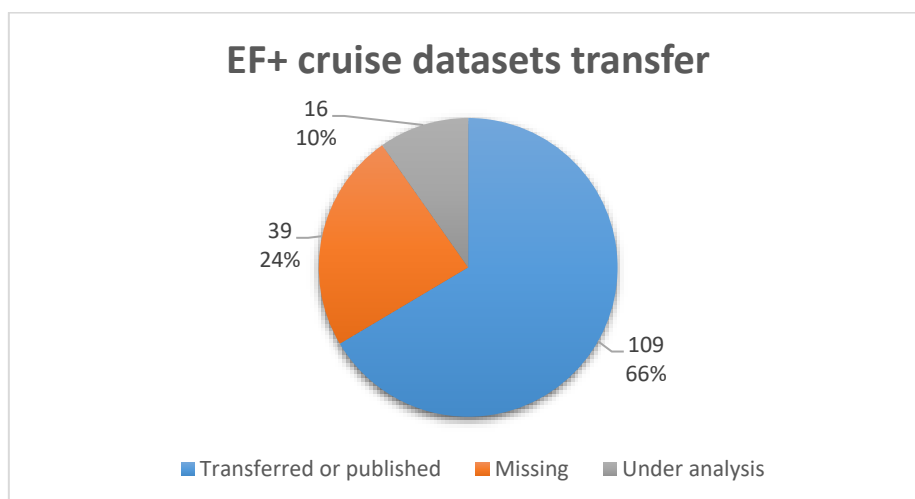


Figure 4. Number and proportion of transferred, missing and under analysis datasets

As shown in Fig 4 and Fig 5, 66% of the datasets have been transferred or directly published by their data-originators. 10% of the datasets have not been transferred yet because they are still under analysis (lab work, post-processing, analysis, quality checks). The remaining 24% of datasets have not been delivered by the PIs despite many contacts and reminders. Some preferred to manage their data by themselves, some show some delays in delivering data and some did not give any follow-up despite RDCs attempts. Annex 1 and 2 give a detailed overview of the cruises data management and collected datasets status. In several cases, delayed delivery of data are due to postponed cruises to 2023 due to COVID which gave less time to the crew scientists to perform the analysis. Also, due to the cruises

postponing, the ship time and cruise program had to be adapted impairing sometimes the analyses plans. The rescheduling of the cruises also led to scientific staff loss (mainly junior scientists as PhD students) as the time between the proposals submission and the data collection expanded over their contract, which resulted in no more or less staff to perform the analysis.

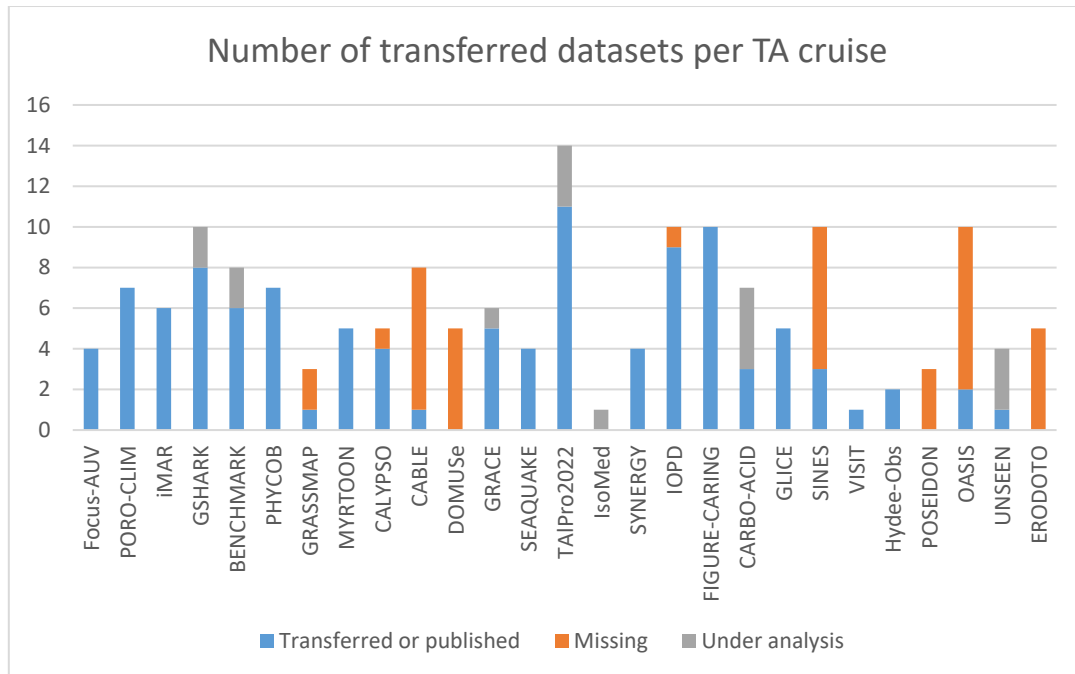


Figure 5. Dataset transfer status per TA cruise

A total of 5.72 Tb of data files has been transferred amongst the 3 RDCs. Note that the dataset volumes may vary a lot between the datasets according the measuring instrument. It is not representative of the manpower effort to produce interpretable values. Automated instruments such as multibeam or ADCP can (almost) instantaneously generate tremendously large amount of data files of Gb during one deployment where analysis of a cruise water samples can take months and results in one data sheet. It is therefore not a surprise that geophysical datasets represent 95% of the transferred data volume (5.46 Tb). Nonetheless, below in Fig 6, the number of cruises which total transferred data size belongs to (arbitrarily defined) size categories. We can see that for instance 33% of the cruises transferred relatively small size datasets of less than 500 Mb where 26% of the cruises delivered datasets set between 500 Mb and 50 Gb. 4 cruises generated total data files of more than 100 Gb.

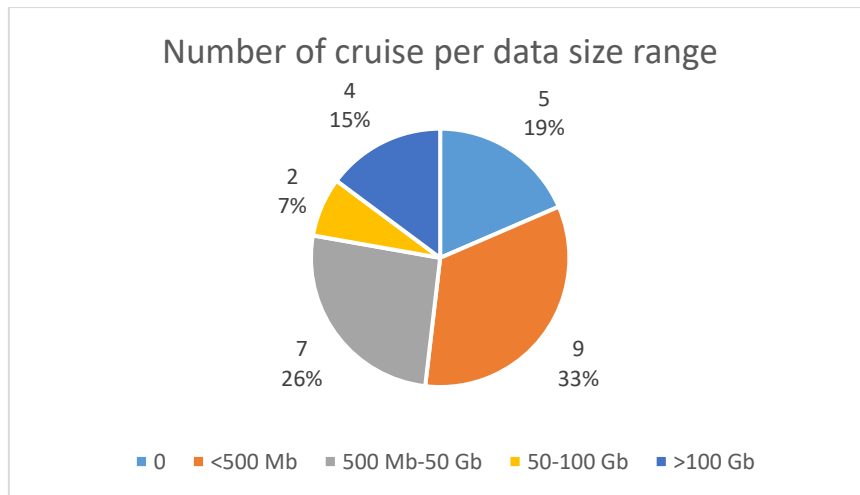


Figure 6. Number of TA cruise categorized per data size range

PIs could opt for an embargo period when completing their DMP. Fig 7 shows that on the 28 PIs, 23 of them (79%) requested an embargo period. In most of the cases, 2 years’ embargo (the maximum period allowed by the project) was requested. 6 PIs (21%) choose to publish their data openly from the start (no embargo).

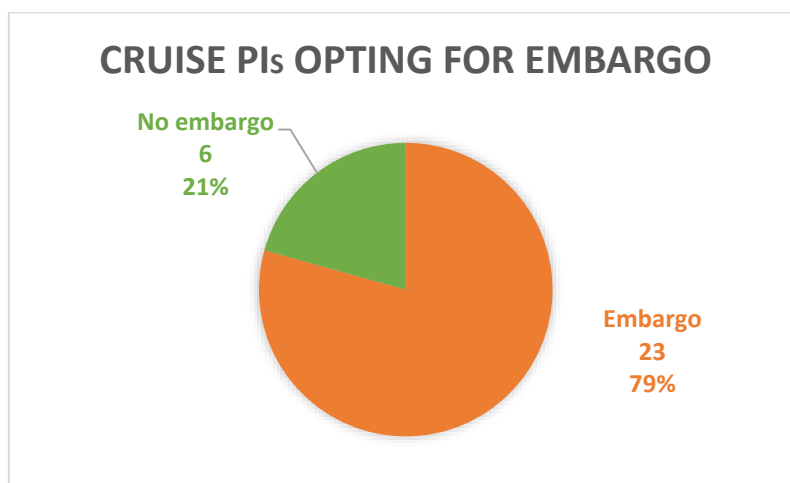


Figure 7. Proportion of PIs opting for embargo for part of all of cruise generated datasets

Some PIs requested an embargo only for some of their datasets whereas other PIs requested an embargo for their entire set of collected datasets. As shown in Fig 8 and Fig 9, 64% of the datasets were requested to be only published under embargo where 36% were open. As the project ran over more than 4 years, some of the requested embargo ended where some are still ongoing. 7 PIs asked for extension of the requested embargo to have time to provide processed and quality checked data or to allow publishing their results in journals.

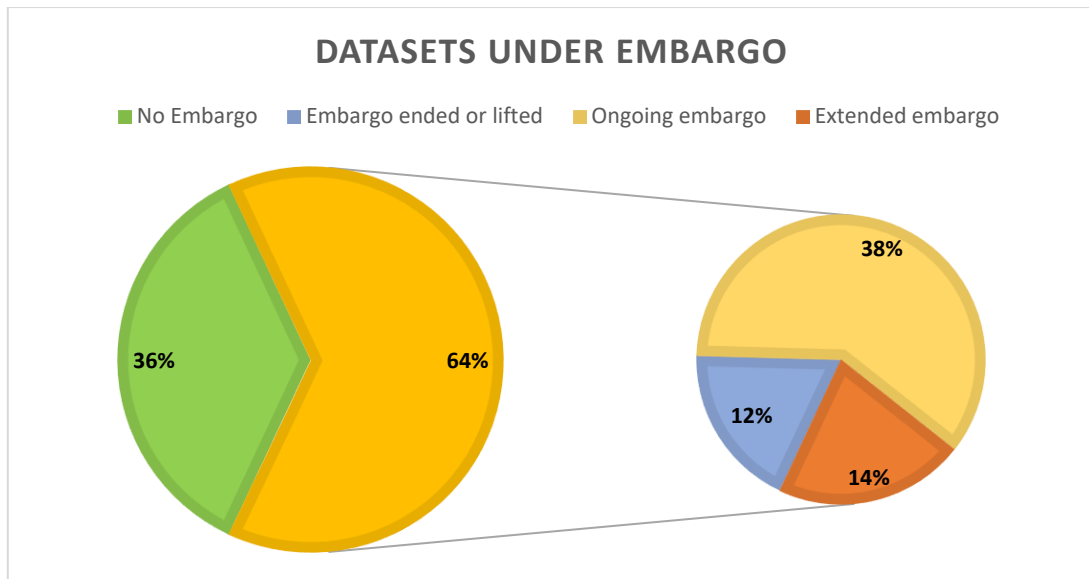


Figure 8. Proportion of EF+ datasets under embargo.

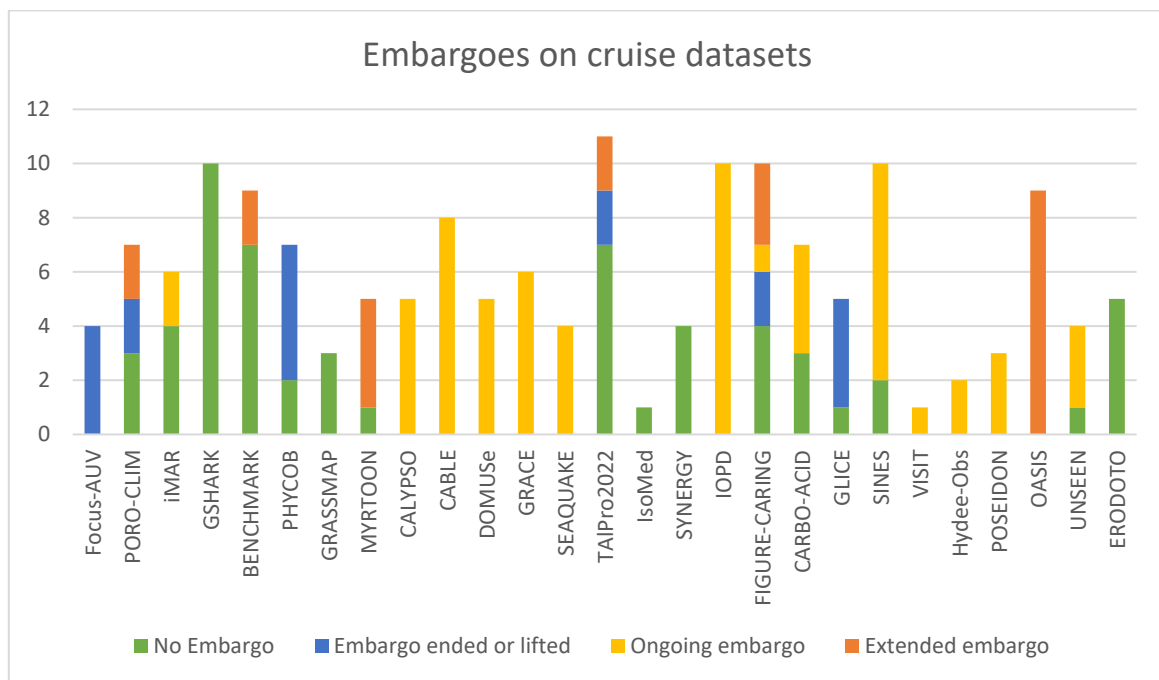


Figure 9. Number of datasets under embargo (ongoing embargo, embargo ended or extended embargo) and with no embargo

When extension of an embargo is requested, mostly for journal publication reasons, RDCs have asked the data deposit as soon as available. The datasets under embargo would be published only under restrictive access to respect the moratorium.

It should be mentioned that when completing their DMP, “open research data” was the default option but it was still possible to opt-out and select a more closed data model. However, none of the PIs

selected a different model reflecting their will to share their data. Most of them selected either the public domain CC0-license which is the Eurofleets+ default license or CC-by 4.0 license.

Collected datasets are aimed to be published on target infrastructures in order to reach FAIRness. Over the recorded 164 datasets, Fig 10 shows the proportion of published datasets on the 3 target repositories (i.e. EMODnet DIP, SeaDataNet CDI Service, SEANOE). Almost one quarter of the recorded datasets are currently published on EMODnet DIP, one third is published on SeaDataNet CDI and 14% is published to SEANOE. The ingestion results may seem limited but this should be moderated by the fact that:

- 66% of the generated have been delivered,
- EMODnet DIP only publish open access datasets (no embargo),
- Ingestion into SeaDataNet CDI service is a time consuming task given that data validation and harmonisation is required,
- Significant part of the received datasets have been delivered close to the end of the project giving no time to the RDCs to perform data curation,
- SEANOE was firstly recommended for publication of exotic datasets and to get a DOI.

Also, the result should be interpreted with care since one dataset can be published to many repositories.

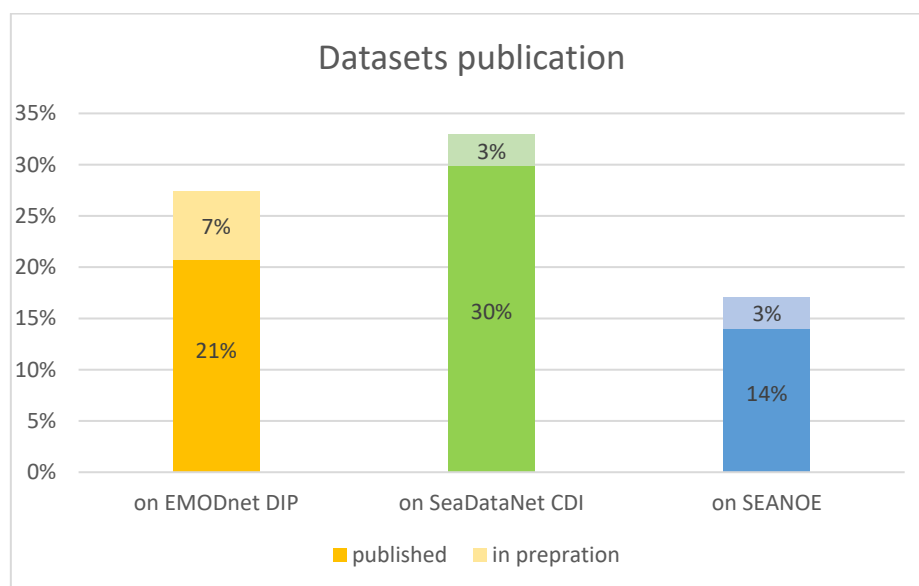


Figure 10. Number and percentage of datasets published on target repositories

From the RDCs perspective, reaching up to 30% of publication into the different infrastructures is considered as a satisfying project outcome given:

- the time required by scientists to provide exploitable data.

- the complexity of the data curation tasks specific to each cruise and each dataset,
- the dependency on collaboration and communication with the data-originators

The Annex 2 gives a better insight of each of the datasets status and workflow.

Publications

Leaving aside the measurement unit of “dataset”, the data ingestion process can be assessed under the perspective of the data infrastructures on which the cruise data are published. On EMODnet DIP and SEANOE, a submission results in a publication and may contain one or several datasets of a same cruise. The degree of aggregation of the datasets may differ according the degree of granularity desired by the data originator. In Eurofleets+ project, it was recommended to aggregate the datasets per discipline but the recommendation has not been closely followed.

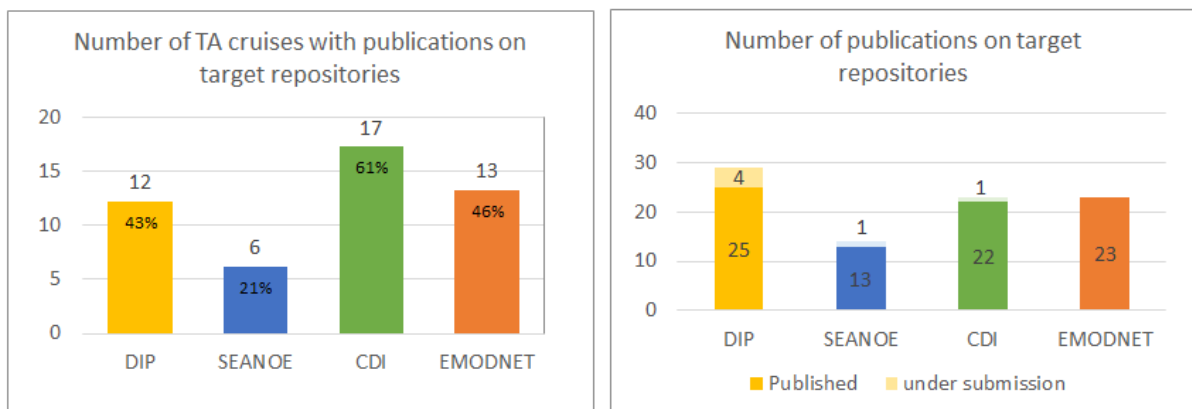


Figure 11. Number and percentage of publications on target repositories

The number of publications as reported on Eurofleets+ EVIOR portal (<https://evior.eurofleets.eu/cds/search>) is shown in Fig 11 and 12.

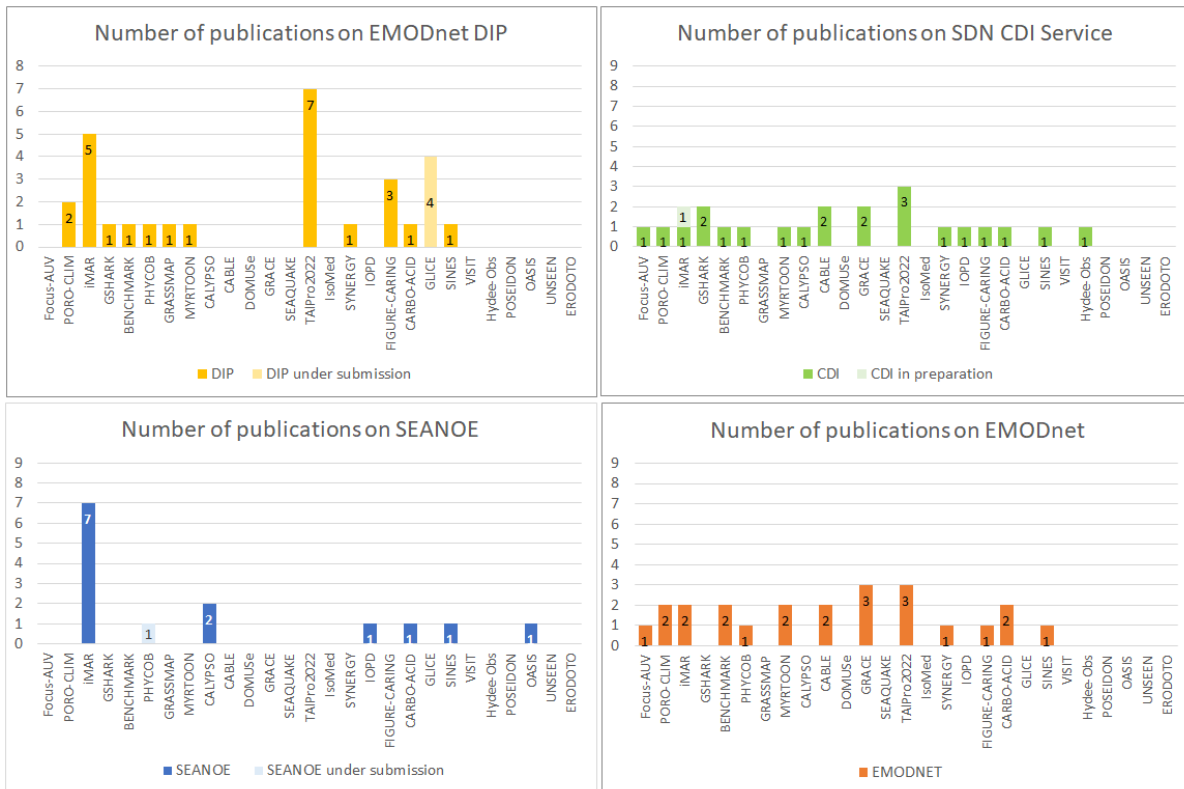


Figure 12. Number of publications on EMODnet DIP, SEANOE, SeaDataNet CDI Service and EMODnet per cruise

SeaDataNet CDI Service

There have been 22 publication batches of CDIs on the SeaDataNet CDI Service for 17 cruises. A CDI is a formatted metadata description file. When (formatted) data are submitted to SDN CDI Service, corresponding CDIs are attached to the data file. Note that a CDI does not give a measure of the size of the ingested dataset as one CDI can correspond for instance to one cruise trajectory, one profile cast, one discrete sampling or to one-time series. The number of CDIs is however used here as a good indicator of the quantity of data ingested. It reflects also the work of the three RDCs to validate and harmonise the data accordingly as each dataset requires a tailored elaboration process. A total number of 3914 CDIs have been published on the SeaDataNet CDI Service, including 3209 CDIs for CALYPSO cruise. It results that 705 CDIs have been published for all other cruises. 272 CDIs are still in preparation.

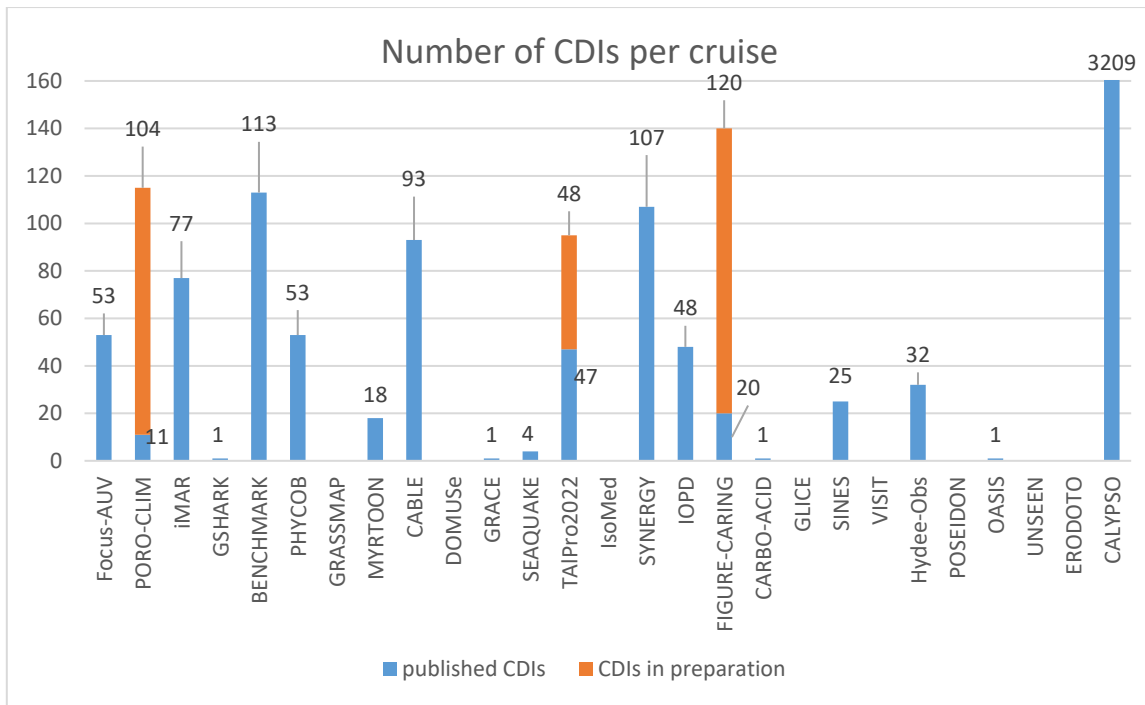


Figure 13. Number of CDIs published with EDMERP project code ‘Eurofleets+’

In Fig 13, it can be observed that only 8 cruises on 28 have no CDIs published. These cruises correspond for most to cruises for which no data have been transferred yet or have been only recently due to the timing of the cruise. The 20 other cruises count at least one CDI published. For three of the cruises, CDIs are still in preparation. CALYPSO cruise count 3209 CDIs generated with 98% of the CDIs generated for CTD.

Publishing data on SeaDataNet CDI Service ensures that data are interoperable and mapped to standard vocabularies. Fig 14 gives an overview of the 25 most used instrument types (SeaDataNet Common Vocabulary L05).

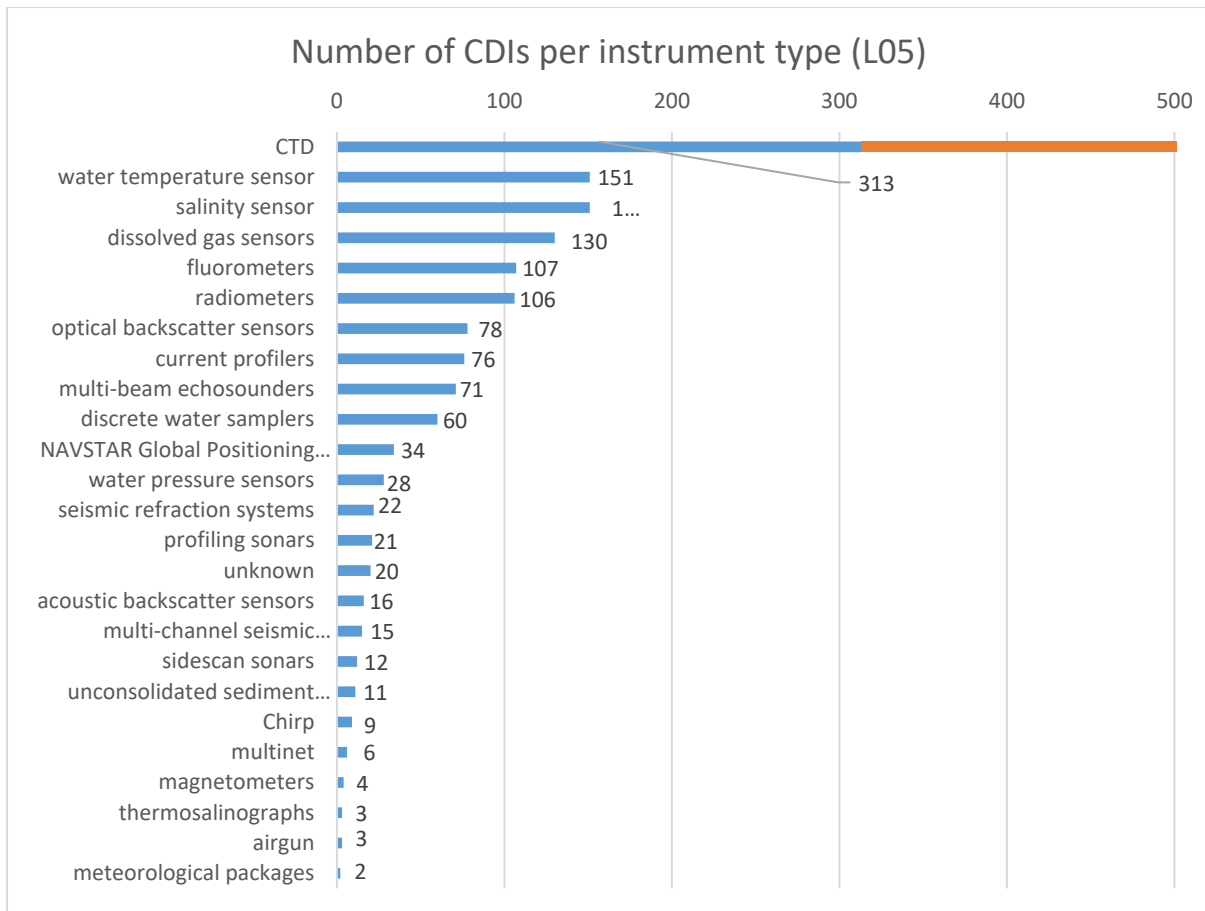


Figure 14. Number CDIs per instrument type (25 most frequent instruments) for Eurofleets+ project. In orange, the 3135 CDIs (extending out of the chart) generated for CALYPSO cruise CTDs.

Highest number of CDIs (besides CALYPSO cruise) is for CTDs followed by sensors (temperature, salinity, dissolved gas and fluorometers) often attached to the CTDs. Many instruments measuring geophysical parameters (e.g. multibeam, sonars, echosounders) and physical parameters (e.g. current profilers, backscatter sensors) are represented as well. Many CDIs are derived from water samplers as many biochemistry and biological measurements are derived from them.

Fig. 15 shows the number of Eurofleets+ CDIs openly available (CC-by 4.0 for Creative Commons Attribution 4.0 International) and those under moratorium set as “by negotiation”. CDIs of CALYPSO cruises (3209 CDIs) which are “by negotiation” have been discarded from the chart for a better insight.

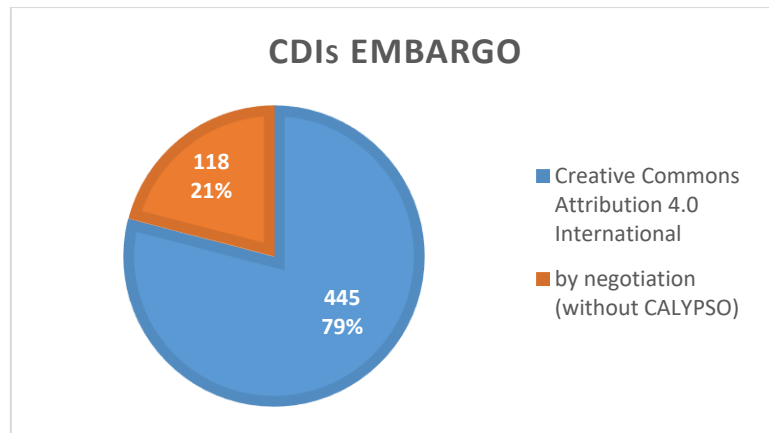


Figure 15. Number of CDIs, with EDMERP project code for Eurofleets+, published on SeaDataNet CDI Service with and without moratorium. CALYPSO cruise CDIs discarded from the chart.

The vast majority of the published CDIs are currently published without any restrictions. The rest will be opened up at the end of their embargo.

FAIRness

The overall aim of the Eurofleets+ project Data Management is to make data reaching high degree of FAIRness and Open Data. Based on the monitoring indicators described in Table 1 and based on the number of “datasets” generated per TA cruise, Fig. 16 shows for each cruise the percentage of FAIRness achieved at the end of the Eurofleets+ project. Fig. 17 gives a summary of the percentages over all the datasets generated during the 28 Eurofleets+ cruises.

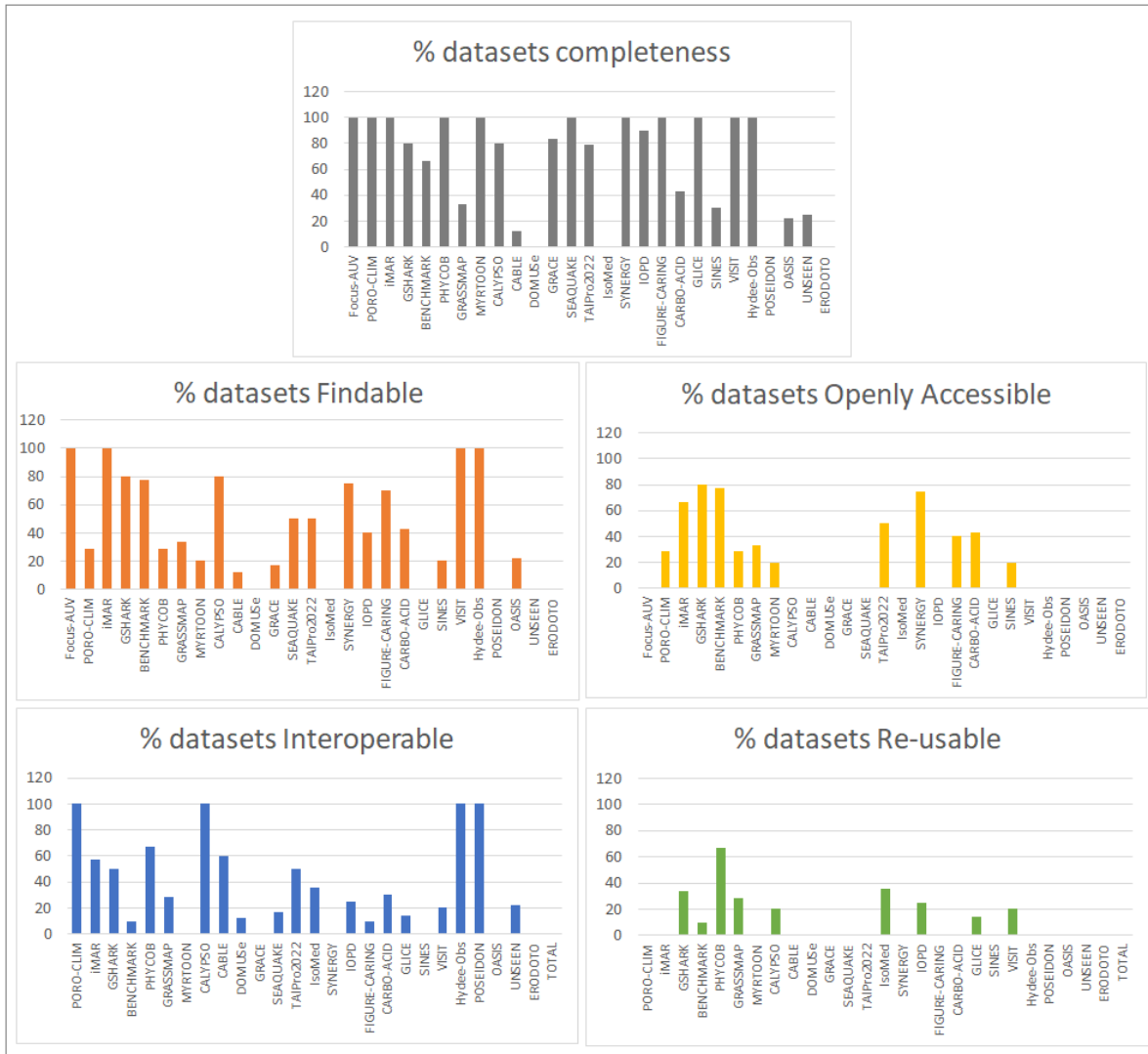


Figure 16. Percentages of datasets per TA cruise achieving Eurofleets+ FAIRness implementation indicators

Within our definitions of Openly Accessible and Re-usable, the presence of embargo result in less number of datasets achieving A and R of FAIRness. However, when the embargo will end, as all PIs opted for an open data license, the datasets under moratorium will be opened up and available for data access and re-use. Meanwhile, the data under embargo may be available “on demand” or “by negotiation” with the data originators.

The data management of Eurofleets+ project led to the deposit of 66% of the datasets collected during the 28 TA cruises ensuring their preservation into the RDC infrastructures or within sustainable repositories. 43% of the generated datasets are published with enriched metadata on repositories assigning unique and persistent identifier which makes them Findable. Half of the transferred datasets are published with metadata following ISO 19115 metadata standard and using common vocabularies making then Interoperable.

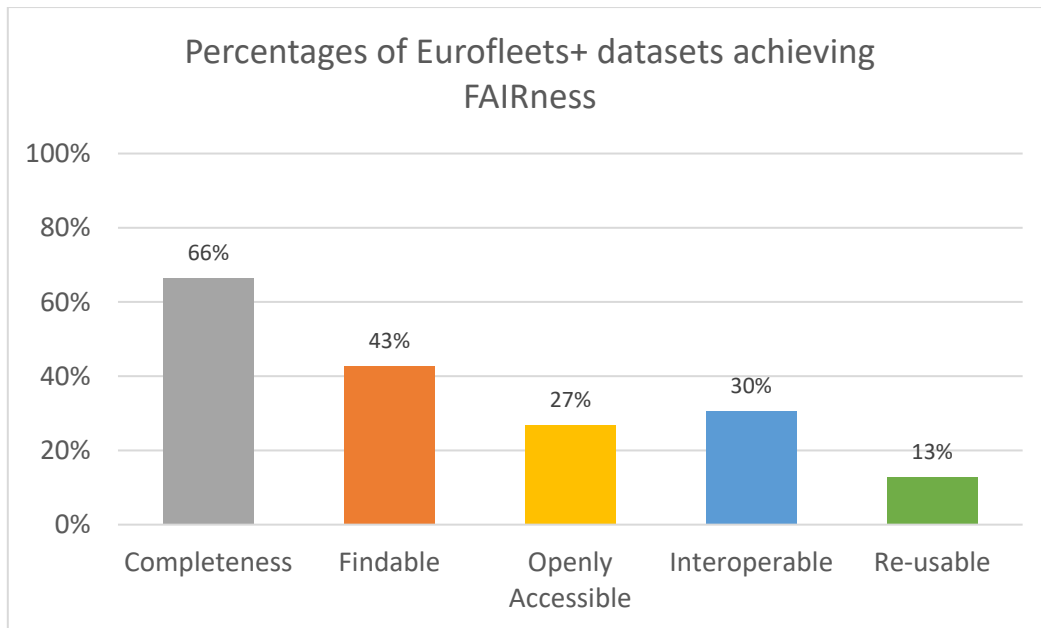


Figure 17. Percentages of TA cruise datasets achieving EF+ FAIRness implementation indicators

As shown in this chapter, defining one indicator of the data management progress is not a straightforward exercise as it needs to capture many various criteria such as the data size, the data curation effort, the degree of complexity of the data type and data format. Behind these numbers are however hidden the efforts and the passion of scientists collecting the data and trying to achieve good science out of it as well as the work of dedicated data managers to provide good data for preservation and re-use for future researchers.

Given the scale of the project, the amount of data generated and the time scale involved, it could not have been expected to achieve 100% of FAIRness. However, achieving present scores may be considered as a very satisfactory rate.

4. Data management roadmap beyond the end of the project

As shown 66% of the datasets have been already transferred, 10% of the datasets are still being under process by the data originators and another 24% without status update. For the 10% datasets under process, all PIs confirmed their commitment to give a follow-up to the data submissions and to deposit the data as soon as ready or as soon as the journal publications are submitted. PI's have been informed that lack of cooperation in delivery of collected data may impact their future implications in grant agreement of TNA programs. The DMP Roadmap tool will be maintained to allow PIs to update their DMP. Transferred datasets are preserved by the RDCs. Ongoing submissions will be finalized. Ingestion of remaining datasets will not be proceeded in the scope of Eurofleets+ project but RDCs will remain

present as reference NODCs for remaining datasets deposit as well as to open up the restriction access imposed on published CDIs at end of the embargoes.

5. Lessons learned and recommendations

Adapted guidelines

Despite guidelines and webinars being set up to prepare PIs to manage their data following best practices, it has been observed that data management is not yet part of the scientific mainstream.

Scientists should be provided with additional assistance in the data management process with enhanced support and collaboration from and with the NODCs. Clear and simple guidelines should be provided as well as templates and/or examples of expected (meta)data format. More data management trainings would be necessary.

Communication with PIs and associated research teams

Most of the PIs are very collaborative and endeavour to submit all their data and required metadata. However, there are exceptions, whereby RDCs need to send many reminders. Last resort is EF+ coordinator intervention. Late replies from PIs may however result from the efforts needed from their side to gather information from the often large and international scientific crew. This also explains the lack of in time reaction for some PIs.

From the start, there should be clear communication to PIs about the DM policy as contractually agreed, followed by virtual meetings organized by RDCs for PIs and research teams to explain planned DM workflow, procedures, standards, and RDC support, as well as checking the DMP. Lack of cooperation may impact their future implications in grant agreement of TNA programs.

Transfer of complete sets of metadata and data

Based on both DMP and Cruise Report, the RDCs are checking the completeness of the submitted/transferred data and metadata. They contact PIs to enquire about missing datasets and when to give follow-up. Often, metadata information on the time reference, device model, data processing (lineage) and quality flags are incomplete or missing.

Also, it should be emphasized to the PIs that they need to deliver processed instead of non-processed data, including supporting metadata, following the prevailing standards.

Data submission workflow

PIs have sometimes been confused on which workflow they should follow according the type of data and the embargo, with some concerns about duplicate submissions. It has been observed that PIs are more likely to submit to SEANOE specially to get a DOI but also because it allows to make submission updates with versioning.

SEANOE should therefore be used as a primary channel to get data deposit from which project submissions should be prioritized for semi-automated harvest into EMODnet DIP.

Data curation

When transferred, the RDC performs a 1st-line quality check (spatial and temporal coverage, range checks). However, the RDC cannot assess the consistency and quality of the data without expert opinion of the data originators. Quality flags need to be provided. In order to make the data interoperable, it needs to be harmonized, including mapping to controlled vocabularies. Also, use should be made of common data formats.

In practice, the data curation process is a time and effort consuming task, which cannot be left only to the RDCs. The PIs and researchers should include time and effort in their project proposals and plans for doing most of these efforts, thereby coached by the RDCs. More guidelines and training for scientists to provide quality checked (meta) data following standards and common vocabulary should be given.

Timing: late data delivery because of lab work and other issues

PIs are expected to submit or transfer their data within 2 months after the cruise or as soon as the data becomes available. This results in data being delivered in batches, often with missing datasets. Most of those delayed datasets are due to lab work which require a significant amount of time to process and for which it seems often difficult to foresee how long it would take to provide resulting data. Hence, the COVID pandemic and the rescheduling of the cruises to the last year of the project, has also provoked delayed datasets delivery beyond the project end due to the time needed to perform lab work.

This should be a point of attention during the cruise proposal planning, and following DMP which should also include a roadmap extending beyond the project.

6. Conclusion

Eurofleets+ project granted the opportunity to European and international scientific crews to collect research data on board of a unique fleet of state-of-the art research vessels. It adopted the H2020 data management strategy following Open Research Data and FAIR principles. Its singularity is that this data management is centralized and coordinated by Responsible Data Centers for all and each of the 28 TA funded cruises, in collaboration with the PIs and scientific crews. Data Management Plans have been prepared prior to the cruises, Cruise Summary Reports created and collected data have been gathered, validated and harmonised for publication on the pan-European SeaDataNet platform, as much as possible. The granted cruises collected over 160 datasets of multidisciplinary data across the world oceans. Almost 70% of them have been handed for preservation, more than 40% are or will be Findable and Accessible and more than 30% is and will be Interoperable and Re-usable. All PIs demonstrate their will to share their data openly selecting open access licenses even though most of them asked for an embargo period to allow results publications. The data management progress reached was what could be expected to be achievable given the scale of the project, the amount of cruises to follow-up, the quantity and diversity of data generated and the time scale involved. Eurofleets+ is under this perspective an ambitious pilot project as it deployed an integrated and uniform data management approach on a multiplicity of research projects with their own objectives, challenges and timescales. As pilot, lessons have been learned that will serve future integrated overarching projects in their data management aspects. Main lesson is that good scientific Data Management is the result of a cooperation between scientists and data managers. Scientists have the expertise in providing meaningful data, data managers ensure that they are preserved in a sustainable way and published in interoperable infrastructure to be shared and re-used by future generations. They are complementary and none can be set aside. Achieving Open Research Data and data FAIRness means bringing awareness to scientists on Data Management good practices and fostering collaboration and communication between data managers and data-originators.








Annex 1. Summary of the Eurofleets+ TA cruises data management

ID	Year	RV	Cruise Name	Timing	DMP DC	Data DC	DMP	CSR	Embargo	Transf or Publ	DIP1	CDIs	SEANOE	# CDIs	Transf data size	Embargo end
3	2020	UGOT Hugin AUV	Focus-AUV	Sept 30th - Oct 29th	HCMR	HCMR								53	720 Gb	Oct-22
8	2021	Celtic Explorer	PORO-CLIM	05-30th May	HCMR	HCMR								11+104 (in prep)	170 Gb	May-23 extended to ~Oct-25 (seismic)
1	2021	Pelagia	iMAR	May 18th - June 3rd	OGS	HCMR OGS								86	1.3 Mb + 1.4 Gb (bathy)	Dec-24
5	2021	DANA	GSHARK	July 30 - 12 August	RBINS	RBINS								1	1.1 Gb	/
2	2021	GO Sars, ROV Aegir	BENCHMARK	01-10 August	RBINS	HCMR RBINS								113	72 Mb	Aug-23 extended to Feb-2024
7	2021	Tubitak Marmara	PHYCOB	9th - 15th Sept	RBINS	RBINS								53	1.8 Mb	Sep-23
4	2021	SOCIB	GRASSMAP	14th - 20th September	OGS	OGS									60 Gb	/
6	2021	Aegeo	MYRTOON	29 Sept - 08 Oct	HCMR	HCMR								18	650 Mb	01/10/2023 extended to Jun-24
9	2022	Pelagia	CALYPSO	16 Feb - Mar 10	OGS	OGS								3209	33 MB	Mar-24
10	2022	Aranda	CABLE	22-29 April & 10-13th October	OGS	OGS								93	45 Mb	Oct-24

ID	Year	RV	Cruise Name	Timing	DMP DC	Data DC	DMP	CSR	Embargo	Transf or Publ	DIP1	CDIs	SEANOE	# CDIs	Transf data size	Emgargo end
10	2022	Aranda	DOMUSE (Co-PI on CABLE)	14th October	OGS	OGS										Oct-24
11	2022	Belgica II, AUV Barabas	GRACE	28 April - 11 May	HCMR	HCMR								1	34.5 Gb	May-24
11	2022	Belgica II, AUV Barabas	SEAQUAKE (Co-PI on GRACE cruise)	28 April - 11 May	OGS	HCMR OGS								4	25 MB + 70 Gb (bathy)	May-24
14	2022	Belgica II	TAIPro2022	17-26th May	RBINS	RBINS								47	56.9 Mb	May-23 extended to May-24
14	2022	Belgica II	IsoMed (RTA during TalPro22)	17-26th May	N/A	RBINS										/
12	2022	Arni Friedrikson	SYNERGY	18 - 25 June	OGS									107	232 MB + 800 Gb (echos.)	/
15	2022	Sanna	IOPD	28th June - 10th July	RBINS	RBINS								48	3.5 Tb (Acoustic) + 15 Gb	Jul-24
16	2022	Atlantic Explorer	FIGURE	21-30 July	RBINS	RBINS								20 + 120 in prep.	14 Gb (SPASSO) + 845 Mb	Jul-24 extended to Dec-24
16	2022	Atlantic Explorer	CARING (Co-PI on FIGURE cruise)	21-30 July	RBINS	RBINS										Jul-24 extended to Dec-25
13	2022	Ramon Margalef	CARBO-ACID	3-12th August	HCMR	HCMR RBINS								1	130 Mb	Aug-24

ID	Year	RV	Cruise Name	Timing	DMP DC	Data DC	DMP	CSR	Embargo	Transf or Publ	DIP1	CDIs	SEANOE	# CDIs	Transf data size	Emgargo end
17	2022	Sanna	GLICE	10-24 Aug	RBINS	RBINS	completed	completed	embargo	completed	on hold until end of embargo				264 Kb	Aug-23
19	2023	Tangaroa	VISIT	31 March - 11 April	HCMR	HCMR OGS	completed	completed	embargo	completed		completed			22 Gb	Apr-25
20	2023	Tangaroa	Hydee-Obs	21 - 31 March	HCMR	HCMR	completed	completed	embargo	completed	on hold until end of embargo	completed		32	1.16 Gb	Mar-25
25	2023	RV Laura Bassi	POSEIDON	12-22 June	HCMR	HCMR	missing	completed	embargo	missing	on hold until end of embargo					Jun-25
23	2023	Thalassa, ROV	OASIS	26 March - 7 April	OGS	OGS	completed	completed	embargo	completed	on hold until end of embargo	completed	completed	1		3 years embargo: Apr-26
24	2023	Thalassa, ROV	UNSEEN (Co-PI on OASIS cruise)	26 March - 7 April	RBINS	RBINS	completed	not applicable	embargo	completed	on hold until end of embargo				27 Kb	Apr-25
22	2023	RV Aegaeo, ROV Max Rover, AUV Barabas	ERODOTO	1-12 July	OGS	HCMR OGS	missing	completed	unknown	missing						unknown

Legend:

	completed
	datasets curation started and in progress
	embargo
	data partially under embargo
	not applicable
	on hold until end of embargo
	missing

Annex 2. Case-by-case overview

The following overview gives the final data management status cruise by cruise. The data ingestion status is described for each dataset with in green the dataset phases (transferred, submitted to DIP, CDIs published or published on SEANOE) which are already achieved. Dashed green cells refer to ongoing phases. The 'R' in the green cells are related to 'Restrictive' access when the ingested datasets are published under embargo. The cells coloured in grey represent a 'not applicable' phase.

Cruise Name	iMAR				
Cruise No.	1				
Cruise year	2021				
RDC	OGS				
	HCMR (bathymetric data management)				
Cruise dates	May 18th - June 3rd				
PI	Telmo Morato				
DMP					
Status	Full DMP reviewed				
Evaluation	Complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/20213136				
Data management					
Embargo	No embargo for CTD and SVP data.				
	Embargo of 2 years for ADCP and multibeam data.				
End of embargo	31/12/2024				
License	Public and Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD				
	List of stations				
	List of deep-sea video stations				
	SVP				
	ADCP				R
Bathymetric data	Multibeam			R	R
Data volume	1.3 MB + 1.4 Gb the bathymetric data				
Number of published CDIs	46 + 40 for multibeam data				
Final DM status	All data have been transferred and published. The bathymetric data are under embargo. Besides the scheduled cruise on 2021, iMAR were offered some extra vessel days by NIOZ in 2022 to compensate for some troubles that were experienced in 2021. Therefore, additional data from the second cruises have been provided. In total 40 CDIs with bathymetric data have been prepared and published at CDI. 46 CDIs published for physico-chemical data.				
Evior portal	https://evior.eurofleets.eu/cds-report/1				

Cruise Name	BENCHMARK				
Cruise No.	2				
Cruise year	2021				
RDC for DMP and CSR	RBINS				
RDC for data handling	RBINS (physico-chemical and biological data) HCMR (bathymetric data management)				
Cruise dates	August 1 – August 10				
PI	Burgos Julian				
DMP					
Status	Submitted on time by PI and reviewed by RDC				
Evaluation	Very complete				
Review	Overall full DMP completed on time and well detailed. RDC suggests to use more community standards and vocabularies and to add more lineage information.				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/20213165				
Data management					
Embargo	No embargo for physico-chemical data.				
	No embargo for multibeam echosounders and backscatter data.				
	Embargo of 2 years for biological data. Extension of embargo for observations of benthic fauna until publication (foreseen during summer 2024) requested by PI and agreed by RDC under condition that data are provided as soon as available (expected around February 2024).				
End of embargo	10/10/2023 + extension to February 2024 (benthic fauna)				
License	CC-BY				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD				
	ROVCTD				
	bottle				
	TSG				
	ADCP				
Biological data	Taxonomic identification (obs. Benthic fauna)				
	DNA sequencing				
Bathymetric data	Multibeam echosounder				
	acoustic backscatter sensors				
Transferred Data volume	72 Mb the bathymetric data + 7 Kb physical data				
Number of published CDIs	81 + 32 (16 CDIs for Multibeam echosounder and 16 for acoustic backscatter) = 113 CDIs				

Final DM status	All physical and marine geology data have been transferred and published to EMODnet DIP in phase 1 and 2 except for ACDP data requiring further formatting to produce CDIs and reach phase 2. Biological data are still under process with laboratory work still ongoing. An extension of embargo until publication has been requested by PI and agreed. Data should be provided as soon as available though.
Evior portal	https://evior.eurofleets.eu/cds-report/2

Cruise Name	FOCUS-AUV				
Cruise No.	3				
Cruise year	2020				
RDC	HCMR				
Cruise dates	September 30 – October 28				
PI	Dr Joshu Mountjoy				
DMP					
Status	Submitted on time by PI and reviewed by RDC.				
Evaluation	Clear and informative DMP				
Review	PI updated the full DMP concerning the embargo time and reduced it from 3 to 2 years following the project specifications. RDC suggested to use more community standards and vocabularies and to improve data interoperability.				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/20213027				
Additional remark	CSR has been created and submitted by PI using BSH CMS				
Data management					
Embargo	2 years (it was 3 years before the DMP review)				
End of embargo	29/10/2022				
License	Embargo ended, data now open				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Bathymetric/geological data	multi-beam echosounders			R	
	Acoustic seafloor Backscatter			R	
	Sub-bottom Profiler			R	
	SideScanSonar			R	
Data volume	720 Gb				
Number of published CDIs	53				
Final DM status	All data are transferred and corresponding CDIs submitted as restrictive access. Embargo end has been confirmed by PI and it will be lifted up.				
Evior portal	https://evior.eurofleets.eu/cds-report/3				

Cruise Name	GRASSMAP				
Cruise No.	4				
Cruise year	2021				
RDC	OGS				
Cruise dates	September 14 – September 20				
PI	Miguel Massot Campos				
DMP					
Status	Full DMP reviewed				
Evaluation	Complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21000608				
Data management					
Embargo	No embargo				
License	CC-BY				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
	Turbot AUV Photographic survey				
	Autonomous Surface Vehicle (ASV)				
	Lagrangian Drifter (LD)				
Data volume	60 Gb				
Number of published CDIs					
Final DM status	PI informed that data will be available in https://soi.squidle.org and on Google Bucket, EMODnet Data Ingestion Portal was suggested for data submission. AUV data has been published on EMODnet DIP. Seafloor imagery data has published as Phase 1.				
Evior portal	https://evior.eurofleets.eu/cds-report/4				

Cruise Name	GSHARK				
Cruise No.	5				
Cruise year	2021				
RDC	RBINS				
Cruise dates	July 31 – August 12				
PI	Bernal Diego. Contact person: Holly Shiels				
DMP					
Status	Submitted with some delay. Reviewed by RDC.				
Evaluation	Sufficient				
Review	RDC suggested to give more detailed answers.				
CSR					
Status	Submitted				
CSR link	https://csr.seadatanet.org/report/20213297				
Data management					

Embargo	No embargo				
License	CC0				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD				
Biological data	sharks catch				
	shark tagging				
Physiological data	In vitro blood experiment for DNA resiliency to damage				
	Reproductive biology: - progesterone levels (received)				
	Reproductive biology: - analysis of genome from sampled tissues (pending)				
	in vivo cardiac responses to temperature				
	whole heart experiments				
	in vitro cardiac mitochondria physiology				
	electroretinograms				
Transferred Data volume	1.1 Gb (compressed)				
Number of published CDIs	1				
Final DM status	All collected data have been received except for 2 physiological datasets. Pending datasets are: 1/ "in vitro blood experiment analyses" which are still being processed with image analyses by undergraduate students, 2/ "analysis of genom from sampled tissues" which are still being processed (at full speed and are expected by end of 2023). CTD data have been published on EMODnet DIP in phase 1 and 2 with 1 CDI generated. Sharks catch have been published on EMODnet DIP in phase 1 but phase 2 was not achieved due to missing mapping terms in P01 vocabulary. Received physiological data have been submitted to EMODnet DIP and will remain "as is" in phase I. Publication is still pending the upload of large data file by DIP operator. No Phase II possible for this data type. Direct contact with the crew scientists to get data and meta-information.				
Evior portal	https://evior.eurofleets.eu/cds-report/5				

Cruise Name	MYRTOON
Cruise No.	6
Cruise year	2021
RDC	HCMR
Cruise dates	September 30 – October 09
PI	Dr Andreas Koutsodendris
DMP	

Status	Submitted on time and reviewed by the RDC				
Evaluation	Clear and informative full DMP				
Review	RDC asked for specifications of the data formats, if they plan to share the analysis software, metadata standards to be used. Full DMP updated with RDC comments.				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21000531				
Data management					
Embargo	CTD are open, 2 years embargo for the rest				
End of embargo	09/10/2023 + extension until June 2024 the latest				
License	Public and Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physical oceanographic data	CTD				
Bathymetric data	Multibeam bathymetric			R	
Geophysical	Airgun profilings			R	
	Sparker			R	
	Sediment corers			R	
Data volume	650 Mb				
Number of published CDIs	18				
Final DM status	CTD, Multibeams, airguns and sparker data are published at SeaDataNet. Sediment cores laboratory analysis of sedimentological and geochemical and radiochronological data is finished and currently a publication is under preparation. PI sent to HCMR the data that has been included in SeaDataNet as restricted. PI asks for one year (up to June 2024) maximum to complete the publication before opening the data.				
Eviar portal	https://eviar.eurofleets.eu/cds-report/6				

Cruise Name	PHYCOB
Cruise No.	7
Cruise year	2021
RDC	RBINS
Cruise dates	9th - 15th Sept
PI	Bernd Krock
DMP	
Status	Submitted on time. Reviewed by RDC.
Evaluation	Sufficient
Review	DMP almost complete. Some questions require, however, complementary information such as a complete list of collected data types, data QC and data harmonization process, the use of common vocabularies.
Additional remark	In addition to the reviewed DMP and suggested updates, RDC provide to PI additional explanations and an example of full DMP.
CSR	

Status	Submitted with short delay				
CSR link	https://csr.seadatanet.org/report/20213265				
Data management					
Embargo	CTD and nutrients data: no embargo				
	Biological data: under embargo of 2 years				
End of embargo	15/09/2023				
License	CC0				
Datasets ingestion status:		Transferred	DIP 1	CDIs	SEANO E
Physico-chemical data	CTD				
	Bottle nutrients				
Biological data	phycotoxins: toxin data				
	isolated species: isolated strains				
	PHYCOB_Net_LM_Phytoplankton				
	PHYCOB_NET_NGS_Phytoplankton				
	PHYCOB-phytoplankton-OBIS				
Transferred Data volume	1.8 Mb				
Number of published CDIs	53				
Final DM status	Physico-chemical data all transferred and published to EMODnet DIP in phase 1 and 2 including 53 CDIs generated. Biological data have been fully processed and transferred. They are pending submission to SEANO E by PI expected for end of October 2023.				
Evior portal	https://evior.eurofleets.eu/cds-report/7				

Cruise Name	PORO-CLIM
Cruise No.	8
Cruise year	2021
RDC	HCMR
Cruise dates	May 5-30
PI	Dr Stephen Jones
DMP	
Status	Submitted on time by PI and reviewed by RDC
Evaluation	Complete and detailed full DMP
Review	RDC asked for specifications of the data formats, some more details and references to the QC and harmonization.
CSR	
Status	Submitted on time
CSR link	https://csr.seadatanet.org/report/20213132
Data management	
Embargo	XBT, Underway data, ADCP are open, 2 years embargo for the rest.
	Embargo extension request for seismic data (+3-4 years from Oct 2021 and Oct 2022).
End of embargo	30/05/2023 + extension until ~Oct 2025

License	Public and Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physical oceanographic data	XBT/raw				
	Underway data (AIS, EUcaws, fluorometer, Gill wind direction, SBE21 thermosalinograph)/raw				
	ADCP/raw Acoustics				
Bathymetric/Geophysical data	Multi beam bathymetric			R	
	Multi-Channel Seismic reflection (MCS)			R	
	Ocean Bottom Seismometer (OBS)			R	
	Magnetometer			R	
Data volume	170 Gb				
Number of published CDIs	11 + 104 under preparation				
Final DM status	Underway and XBT raw data have been submitted at EMODnet Ingestion and are published 'as-is' (phase 1). The geological as well as the ADCP raw data (except magnetic) have been sent to HCMR. HCMR uploaded to SeaDataNet 4 CDIs for magnetometer data, 3 CDIs for multi-channel seismic reflection, 1 CDI for multibeam, 1 CDIs for singlebeam, and 2 CDIs for ocean bottom seismometers. Embargo has come to an end, RDC will ask for PI approval to open up the data bathymetric, magnetometer data. An embargo extension has been requested for seismic data (MCS and OBS) until PhD students has been trained and papers have been submitted (+3-4 years, ~2025).				
Remark	Embargo extension: PI requested to keep the seismic data (MCS and OBS) restricted until the two PhD students have submitted their papers. PhD students need to be trained first, the process is expected to take 3 to 4 years. It will not happen before 2025, including the training of students and the papers' publications. One PhD started in Oct 2021 and the other in Oct 2022.				
Eviator portal	https://eviator.eu/fleets.eu/cds-report/8				

Cruise Name	CALYPSO
Cruise No.	9
Cruise year	2022
RDC	OGS
Cruise dates	March 16th - March 10th
PI	Shaun Johnson
DMP	
Status	Full DMP to review
Evaluation	complete
CSR	
Status	Submitted on time

CSR link	https://csr.seadatanet.org/report/20223082				
Data management					
Embargo	2 years				
End of embargo	11/03/2024				
License	CC BY-NC 4.0				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD			R	R
	ADCP			R	R
	uCTD			R	R
	Float				R
	Drifter				
	Gliders				
Data volume	33 Mb				
Number of published CDIs	3209				
Final DM status	PI informed that data is under embargo of 2 years, for this reason data was submitted on Seanoë and, in agreement with PI, CTD and current profiler data are published on SeaDataNet as restricted data. Remaining data was sent by mail. Data will be imported in SDN as restricted data. Glider data was not available and only 2 drifter datasets were acquired and have been sent to RDC.				
Evior portal	https://evior.eurofleets.eu/cds-report/9				

Cruise Name	CABLE leg 1 + leg 2				
Cruise No.	10				
Cruise year	2022				
RDC	OGS				
Cruise dates	22-29th April & 10-13th October				
PI	Taavi Liblik				
DMP					
Status	Full DMP to review				
Evaluation	complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21025640 https://csr.seadatanet.org/report/21027804				
Data management					
Embargo	2 years				
End of embargo	13/10/2024				
License	by negotiation				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD			R	
	Water sampling: nutrients, oxygen Chl a				

	Sediment sampling				
	Current ADCP				
	wave buoy moorings				
	Gliders				
	meteorological measurement				
	thermosalinograph				
Data volume	45 Mb				
Number of published CDIs	93				
Final DM status	PI is managing the data by himself. No data has been transferred to RDC. 93 CDIs for CTD were directly generated by PI node under restrictive access.				
Evior portal	https://evior.eurofleets.eu/cds-report/10				

Cruise Name	DOMUSe (CABLE leg 2)					
Cruise No.	10					
Cruise year	2022					
RDC	OGS					
Cruise dates	10-13th October					
PI	Alexandra Loginova					
DMP						
Status	Full DMP to review					
Evaluation	complete					
Additional remark	Late, after cruise					
CSR						
Status	Submitted on time					
CSR link	https://csr.seadatanet.org/report/21027804					
Data management						
Embargo	2 years					
End of embargo	29/12/2024					
License	Restricted					
Datasets ingestion status:		Transferred	DIP 1	CDIs	SEAN OE	
Biochemical data	sensors: pH, oxy, sal water sample biochemistry sediment cores (pore water sampling) biochemistry					
biological data		bacteria abundance from sediment cores				
		incubation experiment				
Data volume						
Number of published CDIs						

Final DM status	PI is managing the data by himself. No data transferred. Data stored on PI institute cloud on https://doi.org/10.48457/iopan-177a2d0e-489b-42f8-b1d3-4ac17ce7ba19 .
Evior portal	https://evior.eurofleets.eu/cds-report/10

Cruise Name	GRACE				
Cruise No.	11				
Cruise year	2022				
RDC	HCMR				
Cruise dates	28 April - 11 May				
PI	Dr Carmen Juan				
DMP					
Status	Submitted on time and reviewed by the RDC				
Evaluation	Complete				
Review	No updates needed				
CSR					
Status	CSR submitted				
CSR link	https://csr.seadatanet.org/report/21025651				
Data management					
Embargo	2 years				
End of embargo	11/05/2024				
License	Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physics	CTD			R	
	ADCP				
Bathymetric data	Multi beam echosounders			R	
Geophysical	Seismics			R	
	ROV images			R	
	Sediment cores			R	
Data volume	34.5 Gb (as compressed files)				
Number of published CDIs	1				
Final DM status	1 CDI with multibeam data has been submitted. HCMR received the remaining data (CTD, ADCP, seismics, ROV images) as raw data except the sediment cores for which the lab analysis has not started yet due to logistical issues for the use of the equipment. Received data will be integrated into EF+ as restricted data.				
Evior portal	https://evior.eurofleets.eu/cds-report/11				

Cruise Name	SEAQUAKE
Cruise No.	11
Cruise year	2022
RDC	HCMR - OGS

Cruise dates	April 28th - May 11th				
PI	Sara Martinez Loriente				
DMP					
Status	Full DMP to review				
Evaluation	complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21025650				
Data management					
Embargo	2 years				
End of embargo	11/05/2024				
License	by negotiation				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Data type 1					
Physico-chemical data (OGS)	CTD			R	
Bathymetric data (HCMR)	Multibeam/raw			R	
	TOPAS (Sub Bottom Profilers)/raw				
	AUV (Side Scan Sonar)/raw				
Data volume	70 Gb bathymetry + 25 Mb				
Number of published CDIs	4				
Final DM status	CTD data is under embargo, for this reason data has been published as restricted data on SeaDataNet, in agreement with PI. (HCMR): Multibeam, Sub Bottom Profiles, and AUV (side scan sonar) data are under embargo. PI prepared and submitted to SeaDataNet 1 CDI with raw bathymetric data as restricted data. Processed multibeam will be submitted through EMODnet Bathymetry by the PI. AUV and TOPAS data show not sufficient quality and cannot be used as they do not provide useful information. Raw data are kept in google cloud.				
Remarks	02/06/2023 - PI informed that: a) not all multibeam tracks have been processed, b) AUV data are not processed, they are being processed by VLIZ technicians, and c) TOPAS data is of very poor quality and is not worth spending time processing. They cannot be used as they do not provide useful information. 09/06/2023 - after discussions, it was agreed that PI will prepare and submit the CDI(s) to SeaDataNet. On 09/06, one CDI was submitted with the raw bathymetric data as restricted data. The CDI will be updated in the near future with the processed grid.				
Evior portal	https://evior.eurofleets.eu/cds-report/11				

Cruise Name	SYNERGY
Cruise No.	12
Cruise year	2022
RDC	OGS

Cruise dates	18th - 25th June				
PI	James Waggitt				
DMP					
Status	Full DMP to review				
Evaluation	complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21026618				
Data management					
Embargo	No embargo				
End of embargo					
License	CC-BY				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Data type 1					
Physico-chemical data (OGS)	CTD				
BIOLOGICAL OCEANOGRAPHY	Birds				
MARINE GEOLOGY	Trawl				
MARINE GEOLOGY (HCMR)	Acoustic data (echosounders)/raw				
Data volume	800 Gb (echosounders) + 232 Mb				
Number of published CDIs	107				
Final DM status	All datasets transferred. Physical data has been submitted on EMODnet DIP. CTD data are published on Seadatanet infrastructure and moved in phase 2. Trawling data and birds data received and published on DIP in phase 1. Acoustic raw data (800 Gb) completely transferred to HCMR and stored on Google Drive. No further activity is foreseen by the end of EF+ (e.g. processing the echosounders by HCMR or uploading them to CDI due to their size).				
Evior portal	https://evior.eurofleets.eu/cds-report/12				

Cruise Name	CARBO-ACID
Cruise No.	13
Cruise year	2023
RDC (DMP, CSR)	HCMR
RDC data	HCMR
RDC data	RBINS
Cruise dates	3-12th August
PI	Emilia Salgueiro
DMP	
Status	Submitted on time by PI and reviewed by RDC
Evaluation	Complete
Review	RDC asked PI to change the embargo from 3 to 2 years. PI updated the full DMP

CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21026663				
Data management					
Embargo	2 years except for CTD, multibeam and multinet hydrographic data				
End of embargo	12/08/2024				
License	Restricted				
Datasets ingestion status:		Transferred	DIP 1	CDIs	SEAN OE
Geochemical data:	CTD (open)				
	water sampling				
	biochemical data from cores				
Biological data:	Multinet tows: ecological data				
	Multinet hydrographic data (open)				
Bathymetric data/geophysical data (HCMR)	Multi beam bathymetry (open)				
	Multibeam backscatter				
Transferred Data volume	32 Mb for multibeams + 97.6 Mb				
Number of published CDIs	1				
Final DM status	All available data have been received. CTD data has been submitted to EMODnet DIP in phase 1 during last month of the project. The multibeam data were uploaded by IPMA to EMODnet Bathymetry (dataset name= MB_CARBOACID2022) as open data (CC-BY). One corresponding CDI has been generated for bathymetry. Analysis of collected samples (water, core, multinet) is still ongoing. Multibeam backscatter are available for some stations and have been requested to be transferred to RDC. Backscatter data for remaining stations still need to be processed. Embargo has been lifted for CTD and multibeam which have been openly published by PI.				
Evior portal	https://evior.eurofleets.eu/cds-report/13				

Cruise Name	TAIPRo2022
Cruise No.	14
Cruise year	2022
RDC	RBINS
Cruise dates	17th – 26th May
PI	Katrin Schroeder
DMP	
Status	Submitted on time, reviewed by RDC, updated by PI
Evaluation	Very complete

Review	DMP very well detailed except for lineage information which is missing. RDC asked for updates of lineage. PI updated it accordingly.				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/20223094				
Data management					
Embargo	No embargo for all data measured on the ship. 6 months embargo for other physical data. 1 year embargo for all other variables except isotopes and tracers. Isotopes and tracers: 2 years embargo. Extension of embargo requested for radionuclides and DNA.				
End of embargo	26/05/2023 except for isotopes and tracers which should be later (26/05/2024)				
License	CC BY 4.0				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical sensors data	CTD				
	LADCP				
	VM-ADCP				
	Ferrybox				
	Thermosalinograph				
	Weather				
Chemical measurements	Bottle data from CTD sensors				
	Inorganic nutrients and carbonate parameters (embargo)				
	DOC				
	DOM				
Biological data	Radionuclides (embargo extension)				
	Barium (embargo ended)				
	Underwater Vision Profiler (UVP) Imagery data on ECOTAXA				
	Environmental DNA (embargo extension)				
Transferred Data volume	56.9 Mb (without UVP imagery data)				
Number of published CDIs	47 published + 48 in preparation				

Final DM status	All available data have been transferred. A first batch of physico-chemical data have been submitted to EMODnet DIP by PI. CDIs have been generated for all physical data except VM-ADCP which require additional formatting. All pending datasets are still under processing (lab analysis, quality control, post-analysis) and will be available in the course of year 2024. Extension of embargo has been requested for two datasets until publication. Justification of requested embargo reported below. UVP imagery data are published on ECOTAXA and will be opened up to public on https://ecotaxa.obs-vlfr.fr/prj/6095 .
Planning	<p>1. CDOM and FDOM: Measurements are complete, but quality-controlled data will be ready in November 2024.</p> <p>2. Radionuclides:</p> <ul style="list-style-type: none"> - C14 measurements are complete, but quality-controlled data will be ready in January 2024. - Iodine-129 and uranium-236 analysis started, with a subset of samples expected in September 2024. - Intention to impose a 1 to 2-year embargo on C14 data after submission. <p>3. Environmental DNA: Analysis in progress; completion delayed by 2-3 months due to the analyst's maternity leave. The group intends to impose a 1-year embargo on eDNA data post-analysis.</p>
Embargo extension request	<p>Reasons for Embargoes on (2) and (3):</p> <ul style="list-style-type: none"> - Internal considerations for thorough review and validation of results before wider dissemination. - No legal or contractual impediments; voluntary measure to uphold scientific rigor. - Precautionary step to prevent premature or inaccurate interpretations and ensure proper oversight before data exploitation. - Embargo also allows time for in-depth analyses, exploration of correlations, and preparation for robust scientific publications. <p>The critical importance of capturing all data for the project's final deliverables is understood, especially with the impending end of the project on October 31st. PI is committed to meeting the project obligations outlined in clause 3.4 Scientific and Scientific Party Data.</p>
Evior portal	https://evior.eurofleets.eu/cds-report/14

Cruise Name	IsoMed (RTA during TAIPro2022)
Cruise No.	14
Cruise year	2022
RDC	RBINS
Cruise dates	17th – 26th May
PI	sarah.magozzi@szn.it
DMP	
Status	no DMP required for RTA cruise
CSR	
Status	CSR published for TAIPro2022

Data management					
Embargo	no embargo				
License					
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Isotopes	Zooplankton stable carbon (d13C) and nitrogen (d15N) isotope				
Transferred Data volume					
Number of published CDIs					
Final DM status	No data has been provided as the samples have not been yet analysed. As the PIs' proposal differed from actual granted program, PI only collected part of foreseen opportunistic samples. Only a limited number of 4 samples were collected and will be used in a larger collaborative project. Therefore, priority for analysis is not given to the collected samples. As PI has now changed position and is only informally involved in the project, sample processing is now under the responsibility of SZN institute.				
Evior portal	https://evior.eurofleets.eu/cds-report/14				

Cruise Name	IOPD				
Cruise No.	15				
Cruise year	2022				
RDC	RBINS				
Cruise dates	28th June - 10th July				
PI	wierter.boone@gmail.com				
DMP					
Status	Submitted in time, reviewed by RDC.				
Evaluation	Very complete				
Review	As the DMP is very complete, it is accepted by reviewer as such. No updates required.				
CSR					
Status	Submitted with some delay				
CSR link	https://csr.seadatanet.org/report/21026654				
Additional remark	Support provided by SDN helpdesk to proceed to the CSR submission				
Data management					
Embargo	2 years				
End of embargo	10/07/2024				
License	CC-BY				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD			R	
	Underway Hydro Acoustic				
	VMP Turbulence profiler				
	bathymetry (x,y,z)				
	GPS				

	EARS				
Biochemical data	Bottles: chl a, nutrients				R
	Fast repetition rate fluorometers				
Biological data	plankton samples: multinet microscopy, fatty acids, flow cam				R
	Video plankton recorder validation				R
Transferred Data volume	3.5 Tb UHA + 15 Gb				
Number of published CDIs	48				
Final DM status	All collected data have been transferred completely except Underway Hydro Acoustic data (3.5 Tb) which transfer is ongoing. Processing status of Fast repetition rate fluorometers is unknown. As all data are under embargo, no DIP submission is involved. CDIs have been generated for CTD data. Biochemical and biological results have been submitted to SEANOE during last month of the project.				
Evior portal	https://evior.eurofleets.eu/cds-report/15				

Cruise Name	FIGURE - CARING (Co-Pi)				
Cruise No.	16				
Cruise year	2022				
RDC	RBINS				
Cruise dates	21th – 28th July				
PI	Mar Benavides (FIGURE) and Lidia Carracedo (CARING)				
DMP					
Status	Both DMPs were submitted in time, reviewed by RDC and upated by PIs				
Evaluation	Both very complete				
Review	Both DMPs were very well documented despite some missing information on data format, data versions (raw vs processed data), common standards and license. PIs updated the DMP according the RDC reviews.				
CSR					
Status	Submitted in time				
CSR link	https://csr.seadatanet.org/report/21026645				
Data management					
Embargo	2 years on biogeochemical data Extension of embargo defined during SEANOE submission				
End of embargo	30/07/2024 + Embargo extended on SEANOE until 31/12/2025 (CARING) and 31/12/2024 (FIGURE).				
License	CC0 for FIGURE, CC-BY for CARING				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physical data	CTD and bottle				

	Navigation, weather, underway data				
	SADCP				
	Processed satellite data (14Gb) - SPASSO				
Biogeochemical data	N2 fixation (FIGURE)				R
	NO3, NH4 and AA uptake measurements (FIGURE)				
	DNA discrete and underway sampling (FIGURE) (embargo dropped)				
	pH, alkalinity (CARING)				R
	discrete inorganic nutrients (CARING)				R
	pCO2 (CARING) (embargo dropped)				
Transferred Data volume	14 Gb (SPASSO) + 845 Mb				
Number of published CDIs	20 published + 120 under submission				
Final DM status	All data have been transferred. Physical data published on EMODnet DIP. 20 CDIs generated for physical data and SADCP CDIs under submission. SPASSO data accessible on https://spasso.mio.osupytheas.fr/FIGURE/Processed_web/ and will also be submitted to DIP. DNA data published on ENA databank, RDC asked for raw sequences to be also published on SEANOE with no follow-up. 2 SEANOE submissions published by PI with biogeochemical data partly openly and under embargo. Extension of embargo defined during SEANOE submission..				
Evior portal	https://evior.eurofleets.eu/cds-report/16				

Cruise Name	GLICE
Cruise No.	17
Cruise year	2022
RDC	RBINS
Cruise dates	10th -24th August
PI	Mark Hopwood
DMP	
Status	Submitted in time, reviewed by RDC with no updates required
Evaluation	Very complete
Review	The content is complete for formats, processing and back-up of the cruise data. All data will be openly available, and next to the Eurofleets+ repository, the data will be submitted to PANGAEA. An embargo is requested of 12 months. Meta information will be logged to ensure data interoperability and licences for data-re-use are accepted. On top of the Eurofleets+ infrastructures and procedures, the PI will follow recommendations from the Kiel Data Depository at GEOMAR and the international GEOTRACES program for protocols, nomenclature, flagging and reporting.

CSR					
Status	Submitted with some delay				
CSR link	https://csr.seadatanet.org/report/21026980				
Data management					
Embargo	1 year for biogeochemical data				
End of embargo	24/08/2023				
License	CC0				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physics data	CTD (unprocessed)				
Biogeochemical data	Bottle data for water column parameters taken in parallel with CTDs				
	Underway data for water column parameters taken from the towfish system				
	Concentrations of parameters in ice samples collected on the cruise				
	pH (intermediate results)				
Transferred Data volume	264 Kb				
Number of published CDIs					
Final DM status	All processed data have been submitted by PI to EMODnet DIP during last month of the project. Validation of DIP submission by RDC is ongoing. Only some pH data remained unprocessed (missing calibration post-processing) and is pending quality check (when return of volunteering scientist on leave) but preliminary results for pH have already been transferred.				
Remarks	Justified reasons why the complete dataset for pH could not be transferred in time as explained by PI: <i>"...there were several major issues with the cruise plan as funded, namely covid meant the cruise could not run the year we were offered it, but by delaying a year we lost most of the original junior staff including the lady who planned to undertake the alkalinity work. We also lost the funding to do this work as all our grants expired, as you are aware the Eurofleets funding only covers logistics and not any major laboratory projects post-cruise..." "...as there is no funding to pay for anyone else it is simply not possible to finish that dataset."</i>				
Eviar portal	https://eviar.eurofleets.eu/cds-report/17				

Cruise Name	SINES
Cruise No.	18
Cruise year	2022
RDC	OGS
Cruise dates	11 - 20 September 2022
PI	Marcos Fontela
DMP	
Status	Full DMP reviewed

Evaluation	complete				
CSR					
Status	Submitted on time				
CSR link	https://csr.seadatanet.org/report/21027629				
Data management					
Embargo	CTDs and EARS data without embargo				
	Other datasets under embargo of 2 years				
End of embargo	20/09/2024				
License	CC-BY				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Physico-chemical data	CTD				
	Multinet CTD data				
	AUV				
	Satellite derived data				
	ADCP				
	water sampling: biochemical, taxonomy, DNA,...				
	vertical multinet hauls for zooplankton				
	vertical plankton net				
	Sediment sampling				
	Microstructure vertical profiler				
Data volume	221 Mb				
Number of published CDIs	31				
Final DM status	CTD data have been transferred and published openly on DIP, SeaDataNet CDIs service and SEANOE. AUV data has been transferred and under embargo. For remaining datasets, PI informed he is in contact with the explicit data-users and he guarantees that missing datasets will be uploaded somewhere soon to fulfil EF+ requirements.				
Evior portal	https://evior.eurofleets.eu/cds-report/18				

Cruise Name	VISIT
Cruise No.	19
Cruise year	2023
RDC	HCMR
Cruise dates	31 March - 11 April
PI	Dr Rebecca Bell
DMP	
Status	Submitted on time and reviewed by the TDC
Evaluation	Clear and informative full DMP
Review	Full DMP updated with RDC comments
CSR	
Status	Submitted

CSR link	https://csr.seadatanet.org/report/21029902				
Additional remark	Support provided for submission				
Data management					
Embargo	2 years				
End of embargo	11/04/2025				
License	Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Bathymetric data	Multi beam bathymetric	-	-	R	-
Geophysical	Seismic			R	
Data volume	22 Gb (zip file)				
Number of published CDIs					
Final DM status	PI transferred the seismic data to the HCMR cloud. No bathymetric data were collected on the RV Tangaroa as they did not have the funds to use this equipment after the escalating shipping costs. CDI generation under preparation.				
Evior portal	https://evior.eurofleets.eu/cds-report/19				

Cruise Name	Hydee-Obs				
Cruise No.	20				
Cruise year	2023				
RDC	HCMR				
Cruise dates	21 - 31 March				
PI	Dr Joerg Bialas				
DMP					
Status	Submitted on time and reviewed by the RDC				
Evaluation	Clear and detailed full DMP				
Review	Full DMP updated with RDC comments				
CSR					
Status	CSR submitted				
CSR link	https://csr.seadatanet.org/report/21029901				
Additional remark					
Data management					
Embargo	2 years				
End of embargo	31/03/2025				
License	Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Geophysical	Ocean Bottom Seismometers (OBS)			R	
	Multi Channel Seismics (MCS)			R	
Data volume	1.16 Gb				
Number of published CDIs	32				

Final DM status	Beginning of June 2023 PI uploaded the Ocean Bottom Seismometers (OBS), and the Multi Channel Seismics (MCS) to the HCMR cloud. Middle of June 2023 HCMR uploaded to SeaDataNet 20 CDIS for OBS and 12 for MCS as restricted data.
Evior portal	https://evior.eurofleets.eu/cds-report/20

Cruise Name	ERODOTO				
Cruise No.	22				
Cruise year	2023				
RDC	OGS				
Cruise dates	1-12 July				
PI	Silvia Ceramicola				
DMP					
Status	No DMP submitted yet				
CSR					
Status	CSR submitted				
CSR link	https://csr.seadatanet.org/report/21031496				
Data management					
Embargo	Unknown (no information on DMP)				
End of embargo	Unknown				
License	Unknown (no information on DMP)				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
	AUV (sidescan sonar, photography, temp, sal, ADCP)				
	ROV (videos, pushcores, rock samples)				
	gravity cores				
	CTD				
	multibeam				
Data volume					
Number of published CDIs					
Final DM status	Cruise postponed from 19-30 June to 1-12 July. No DMP and data received yet.				
Evior portal	https://evior.eurofleets.eu/cds-report/22				

Cruise Name	OASIS				
Cruise No.	23				
Cruise year	2023				
RDC	OGS				
Cruise dates	27 March - 7 April				
PI	Claudio Lo Iacono				
DMP					
Status	Full DMP reviewed				

Evaluation	complete				
CSR					
Status	Submitted				
CSR link	https://csr.seadatanet.org/report/21030269				
Data management					
Embargo	3 years				
End of embargo					
License	restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
	multibeam			R	
	CTD-Rosette				R
	LADCP				
	sediment sampling				
	ROV: videos				
	water sampling				
	benthic landers				
	moorings				
	macrofauna observations				
Data volume					
Number of published CDIs	1				
Final DM status	Bathymetric data has been uploaded by CSIS on SeaDataNet/Emodnet Bathymetry under restricted access. The physical data (CTD) is available on SEANOE 'on demand', with the DOI: https://doi.org/10.17882/96677 .				
Evior portal	https://evior.eurofleets.eu/cds-report/23				

Cruise Name	UNSEEN (Co-PI on OASIS cruise)
Cruise No.	24
Cruise year	2023
RDC	RBINS
Cruise dates	26 March - 7 April 2023
PI	Martina Pierdomenico
DMP	
Status	Submitted in time, reviewed by RDC and updated by PI
Evaluation	Complete
Review	DMP complete and well described. Missing information on data harmonization and foreseen data processing have been updated by PI.
CSR	
Status	OASIS CSR published
CSR link	https://csr.seadatanet.org/report/21030269
Data management	
Embargo	2 years
End of embargo	27/04/2025

License	CC-BY 4.0				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Microplastics	Microplastics in sediment				
	Microplastics in water				
	Microplastics in biota				
	metadata (cruise + samples)				
Transferred Data volume	27 Kb				
Number of published CDIs					
Final DM status	Since the UNSEEN cruise was postponed to spring 2023, samples are still being analyzed. Metadata of the cruise and samples have been already sent to RDC.				
Eviator portal	https://eviator.eurofleets.eu/cds-report/23				

Cruise Name	POSEIDON				
Cruise No.	25				
Cruise year	2023				
RDC	HCMR				
Cruise dates	12 - 22 June				
PI	Dr César Rodríguez Ranero				
DMP					
Status	Full DMP not submitted yet				
Additional remark					
CSR					
Status	Submitted				
CSR link	https://csr.seadatanet.org/report/21031515				
Data management					
Embargo	3 years downgraded to 2 years				
End of embargo	01/06/2025				
License	Restricted				
Datasets ingestion status:		Transferred	DIP1	CDIs	SEANOE
Bathymetry	mutibeam bathymetry			R	
Geophysical	Ocean Bottom Seismometer			R	
	Sediment cores			R	
Data volume					
Number of published CDIs					
Final DM status	HCMR was late to ask for the full DMP and therefore its submission was postponed after the cruise conduction (June 2023). Full DMP has not been submitted yet. CSR submitted with support by HCMR and CSR back office.				
Eviator portal	https://eviator.eurofleets.eu/cds-report/25				