



AQUARIUS Dataflow Dashboard – Phase 1 and 2

MARIS

Dick M.A. Schaap



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About this document

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☐	PP: Restricted to other programme participants (including the Commission)
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Acronyms and abbreviations

ADD	AQUARIUS Dataflow Dashboard
CSR	Cruise Summary Report
EDMO	European Directory of Marine Organisations
NODC	National Oceanographic Data Centre
TA	Transnational Access

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1. Introduction

AQUARIUS is a Horizon Europe funded project that runs from 1st March 2024 to end February 2028. The overarching aim is to provide a highly comprehensive suite of integrated research infrastructures appropriate to addressing significant challenges for the long-term sustainability of our unique oceans, seas and freshwater ecosystems. An impressive range of 57 research infrastructure services will be made available by Transnational Access (TA) Calls to include research vessels, mobile marine observation platforms, fixed marine facilities, experimental research facilities, river & basin supersites, aircraft, drones, satellite services, and sophisticated data infrastructures. By collecting new data and generating new information and knowledge through TA projects, AQUARIUS will support the development phase of the EU Mission to Restore our Ocean and waters by 2030, the Sustainable Blue Economy Partnership, the European Green Deal, and international climate initiatives. It will also contribute to the European Digital Twin of the Ocean and the UN Decade for Ocean Sciences.

The intention is to launch two Super Integration AQUARIUS TA Funding Calls inviting European and international researchers to submit proposals. Each Call (one at Month 9 and one at Month 19) will have targeted themes for each of the four lighthouse regions, consisting of the Atlantic & Arctic Basin, Mediterranean Sea, Baltic and North Sea Basins, and Black Sea, along with their associated rivers. Another call [Call 3] may be launched if infrastructures that can be integrated are still available after the first two Calls, and there is sufficient need, demand and capacity. Proposals will be evaluated by a Scientific Review Panel, especially on the basis of scientific and technical quality. Each Call will be open for a period of two months for the submission of proposals. Experience has shown that the time from the closing of a Call to the start of the logistical evaluation is around five months, depending on the number of applications received and the availability of external reviewers. This implies that TA projects might be deployed for the 1st Call from M16 onwards and for the 2nd Call from Month 26 onwards, while the overall AQUARIUS project runs for 48 months.

As part of the TA projects in AQUARIUS, many new data sets in a large variety of data types will be collected by the TA scientific teams, making use and combining multiple and different observation installations as provided. There will be a strong effort in AQUARIUS to get the maximum return of investment from the TA activities towards serving the EU Mission and Partnership targets and associated initiatives and projects with the generation of new data, data products, and scientific knowledge. Therefore, AQUARIUS has adopted an **open data policy**, which will be implemented with a **dedicated Data Management approach**, to ensure that all gathered and generated metadata and data will be managed in line with the FAIR principles (Findable, Accessible, Interoperable, Reusable). The metadata and data should become part of the archives managed and operated by leading European data management infrastructures, such as SeaDataNet¹ (physics, bathymetry, chemistry, biology, geology), EuroBIS² (biodiversity), ELIXIR-ENA³ (biogenomics), ICOS-Ocean⁴ (carbon), and Copernicus INSTAC⁵ (Near- Real-Time data), for quality assurance, long term stewardship, and wide access and use. These infrastructures on their turn are feeding into EMODnet, Copernicus Marine, Blue-Cloud (EOSC), Digital Twin of the Ocean (EDITO) developments, and globally to

¹ <https://www.seadatanet.org>

² <https://www.eurobis.org>

³ <https://www.ebi.ac.uk/ena/>

⁴ <https://www.icos-cp.eu/observations/ocean/otc>

⁵ <https://marine.copernicus.eu/about/producers/insitu-tac>

e.g. GEOSS, and the digital ocean ecosystem that is being developed in the framework of the UN-IOC Ocean Decade programme.

The **Deliverable D6.2** documents the **AQUARIUS Data Management Plan (DMP)**⁶ and describes the AQUARIUS Data Management approach as planned. The approach covers multiple steps in the deployment of TA events, going from planning to reporting a summary of observations to gathering and standardising all collected data sets in a FAIR way in the European leading data management infrastructures. This way, over time all information, metadata and data sets from the TA events will be published as open data and made widely accessible. This will be achieved by a close cooperation between the TA scientific teams and the expert data centres that are active in WP6 for supporting data management and in WP5 for giving training about data management and prevailing European standards.

The results of the data management flow steps will be published on the **AQUARIUS Dataflow Dashboard (ADD)** which is included as a section on the AQUARIUS website. For several steps publishing is done by listing the dedicated links to European services which are adopted for populating and publishing the AQUARIUS TA events and their output.

In addition, TA teams will have to maintain a summary of the observations that they collect on a daily basis. This gives a **TA Summary Log** which is published after the TA events at the ADD. It provides the AQUARIUS Data Management experts with a metadata overview of all data sets and samples that have been collected during each TA events. The TA Summary Log has to be completed by each TA Team using a dedicated application (APP).

This updated **Deliverable D6.3** documents the sitemap and achieved development of the **AQUARIUS Dataflow Dashboard (ADD)**. It also documents the metadata model and the achieved development of the **TA Summary Log APP**. The APP and the ADD were made ready, well tested and operational before M19, in anticipation of the first TA events that were deployed as a follow-up of the 1st Call.

⁶ <https://zenodo.org/records/13642869>

2. AQUARIUS Data Management approach

As part of the TA projects in AQUARIUS, many new data sets in a large variety of data types will be collected by the TA scientific teams, making use and combining multiple and different observation installations as provided. There will be a strong effort in AQUARIUS to get the maximum return of investment from the TA activities towards serving the EU Mission and AQUARIUS Partnership targets and associated initiatives and projects with new data, data products, and scientific knowledge. Therefore, AQUARIUS has adopted an **open data policy**, which will be implemented with a **dedicated Data Management approach**, to ensure that all gathered and generated metadata and data will be managed in line with the FAIR principles (Findable, Accessible, Interoperable, Reusable).

In order to ensure quality assurance, long-term stewardship and wide access and use of the data collected in the AQUARIUS TA projects, it is envisaged that the data and metadata, and possible resulting data products, become part of the repositories managed and operated by the leading European data management infrastructures, namely SeaDataNet⁷ (physics, bathymetry, chemistry, biology, geology), EuroBIS⁸ (biodiversity), ELIXIR-ENA⁹ (biogenomics), ICOS-Ocean¹⁰ (carbon), and Copernicus INSTAC¹¹ (Near- Real-Time data). Achieving this, will also ensure that the AQUARIUS data and data products will become available for EMODnet, Copernicus Marine, Blue-Cloud (EOSC), Digital Twin of the Ocean (DTO) developments, and globally to e.g. GEOSS, and the digital ocean ecosystem that is being developed in the framework of the UN-IOC Ocean Decade programme.

The AQUARIUS Data Management approach is described in detail in Deliverable D6.2 – AQUARIUS Data Management Plan¹². The following table is extracted from D6.2 and gives the AQUARIUS data management flow scheme, which includes a number of steps from planning to training to deployment to publishing, and a number of instruments, which should be applied in those steps.

Steps	Activities	Support
Step 1a – pre-planning	• AQUARIUS Data Management Plan D6.2 included in guidelines for TA proposers	Expert data centres can provide advice upon request
Step 1b – pre-planning	• TA project proposers complete initial Data Management Plan for their project, following AQUARIUS DMP template phase 1, and include this in their TA project proposal	Expert data centres review DMP phase 1 in support of Call evaluation process
Step 2a – planning	• After awarding of TA project, TA proposers are asked to refine their initial Data Management Plan for their	Expert data centres give support and

⁷<https://www.seadatanet.org>

⁸<https://www.eurobis.org>

⁹<https://www.ebi.ac.uk/ena/>

¹⁰<https://www.icos-cp.eu/observations/ocean/otc>

¹¹<https://marine.copernicus.eu/about/producers/insitu-tac>

¹²<https://zenodo.org/records/13642869>

Steps	Activities	Support
	project, following AQUARIUS DMP template phase 2 • Validated TA DMP phase 2 will be published on AQUARIUS Dataflow Dashboard (ADD)	advice to TA project scientific team MARIS
Step 2b – planning	• Preparation of promotional factsheet of the TA project and publishing on AQUARIUS website • Link to promotional factsheet of TA project included in AQUARIUS Dataflow Dashboard (ADD)	WP7 team together with TA project scientific team MARIS
Step 3 – training in data management	• Training in data management organised by webinars for TA project scientific teams • Recorded webinars and presentations made available on AQUARIUS website	Expert data centres, led by HCMR WP7 team
Step 4 - deployment	• Data gathering and processing undertaken by TA project scientific teams, supported by providers of AQUARIUS research infrastructure services • During TA activities, PI of TA project scientific team is requested to maintain an AQUARIUS TA Data Summary Log with an index of data gathering activities • In case the TA project will involve scientific cruises with Research Vessels, then also a Cruise Summary Report (CSR)¹³ should be completed by the TA project PI within a month after the cruise. • Completed TA Data Summary Log for selected TA project will be published on AQUARIUS Dataflow Dashboard (ADD) • If applicable, a link to the Cruise Summary Report on the SeaDataNet portal will be published on the AQUARIUS Dataflow Dashboard (ADD)	Expert data centres are available for advice and support for data management issues MARIS provides a Tablet with App for maintaining TA Data Summary Log TA project scientific team (PI) MARIS MARIS

¹³<https://www.seadatanet.org/Metadata/CSR-Cruises>

Steps	Activities	Support
Step 5 – data processing and transfer	- TA project scientific teams undertake efforts for transforming metadata and data to standard formats as valid for applicable European data management infrastructure(s) - Transfer of elaborated metadata and data as packages, sorted for data types / disciplines, through the Data Submission service of EMODnet Ingestion¹⁴ or SeaDataNet SeaNoe service¹⁵, to expert data centres Links to submissions in EMODnet Ingestion and SeaNoe will be published on AQUARIUS Dataflow Dashboard (ADD)	Coaching and support by expert data centres Reception of data and metadata packages and assignment to selected expert data centres MARIS
Step 6 – publishing of data and metadata in FAIR way	Received data and metadata will be reviewed by assigned expert data centres with feedback to TA project scientific teams. Validated data and metadata will be included in local data centres and populated into the applicable European data management infrastructure(s) Links to inclusions in European data management infrastructure(s) will be published on AQUARIUS Dataflow Dashboard (ADD)	Expert data centres in contact with TA PIs Expert data centres MARIS
Step 7 – training in open science practices	Training in open science and use of the Blue-Cloud VRE and its applications, organised by webinars for TA project scientific teams - Recorded webinars and presentations made available at AQUARIUS website	Blue-Cloud VRE experts, led by CNR WP7 team
Step 8 – practising open science	- TA researchers encouraged to register in Blue-Cloud VRE - TA researchers performing analytics on their newly acquired data sets, possibly in combination with data from established data repositories, using Blue-Cloud applications	CNR Coaching and support by Blue-Cloud VRE experts
Step 9a – publishing of data products	TA researchers documenting open science data products with metadata in the Blue-Cloud VRE data products	Coaching and support by Blue-Cloud VRE experts

¹⁴<https://www.emodnet-ingestion.eu>

¹⁵<https://www.seadatanet.org/Software/SEANOE>

Steps	Activities	Support
	catalogue which are shared with EOSC and Zenodo • Links to published data products will be published on AQUARIUS Dataflow Dashboard (ADD)	MARIS
Step 9b – publishing of scientific publications (papers)	• TA researchers preparing potential scientific publications (papers) about their TA projects which could be published with DOIs in Zenodo • Links to scientific publications will be published on AQUARIUS Dataflow Dashboard (ADD)	TA researchers MARIS
Step 10 – FAIR indicators	• Expert data centres maintaining and publishing best practices and FAIRness indicators for the AQUARIUS data flow and its achievements; inclusion by VRE experts about uptake and results of open science practices	Expert data centres and VRE experts

Table 2.1: Overview of the AQUARIUS Data Management Flow scheme

Note: the TA projects might deal with different types of data that could require splitting of packages over multiple expert data centres. In addition, some data types will be available directly during the TA activities (Real time mode), while others are samples that need to be processed in laboratories and/or with dedicated software, which will take extra time and could also imply waiting times (Delayed mode). Therefore, the expert data centres together will use the AQUARIUS TA Data Summary Log as a 'shopping list' to know what data is coming, who to contact, and how to divide over expert data centres. They will also maintain a follow-up scheme so that there is a clear overview of assignments, data flow status, and achieved throughput.

3. AQUARIUS TA Summary Log APP

The **AQUARIUS TA Data Summary Log** has to be maintained by the PI of the TA project scientific team to keep an overview and index of the data collection events. It has to be shared after the TA event with the AQUARIUS expert data centres as it will provide an index to the collected/generated data and relevant documentation, such as who, when, where, how, etc. It will serve for them as a list to know what data to expect from where and who and as a checklist for the following steps in the data management workflow. The **AQUARIUS TA Data Summary Log** contains only metadata and no data.

3.1. Metadata Model

Together with the WP6 team of data management experts a metadata model has been formulated for the AQUARIUS TA Summary Log. It is largely based upon the long experience with the Cruise Summary Report¹⁶ (CSR) which is used for reporting on observations and samples collected during cruises with research vessels. However, a new format was required because the TA projects might combine multiple TA installations and platforms, possibly operated and provided by multiple research infrastructures. These are not only research vessels, but also other types of platforms such as fixed sites, drones, laboratories, etc., which are part of the AQUARIUS RI offer. The metadata model has been designed with the idea that with the TA Summary Log it should be feasible to maintain and complete the summary during the TA data acquisition activities while the summary should also give sufficient information for the expert data centres to get good insights in the acquired data sets and to keep track of their processing flow from as collected to fully validated, elaborated and published. In the metadata model also use is made, where possible, of controlled vocabularies, derived from SeaDataNet. These vocabularies are well maintained, widely in use, and available as user interfaces and machine (web) services. Moreover, for some fields free text entries are possible, in case the vocabularies are not yet covering new entries. Then these free entries later on can lead to new vocabulary terms.

The next pages provide the metadata model that has been formulated and used to develop the TA Summary Log APP. For controlled vocabularies¹⁷ use is made of:

- EDMO¹⁸ (organisations)
- C19 (SeaVoX salt and fresh water body gazetteer)
- C77 (SeaDataNet Cruise Summary Report data categories)
- L05 (SeaDataNet device categories)
- L06 (SeaVoX Platform Categories)
- L22 (SeaVoX Device Catalogue)
- P08 (SeaDataNet Parameter Disciplines)
- AQUARIUS Research Infrastructures¹⁹
- Lighthouse regions

¹⁶<https://www.seadatanet.org/Metadata/CSR-Cruises>

¹⁷<https://www.seadatanet.org/Standards/Common-Vocabularies>

¹⁸<https://www.seadatanet.org/Metadata/EDMO-Organisations>

¹⁹<https://aquarius-ri.eu/research-infrastructures-catalogue/>

PROJECT GENERAL DETAILS											
Project ID (automatic)	Project short name	Project full name	Disciplines (P08)	Summary incl objectives	Lighthouse Region of interest (controlled list)	Date start (YYYYMMDD)	Date end (YYYYMMDD)	Keywords		to be completed before start	
	single; mandatory	single; mandatory	multiple; mandatory	single; mandatory	multiple; mandatory	single; mandatory	single; mandatory	multiple; mandatory; free text		single entry line	

PROJECT SCIENTIFIC TEAM											
Researcher ID (automatic)	First Name	Surname	Country	Email	ORCID	Organisation (EDMO)	Organisation Other	Discipline (P08)	Role	to be completed before start	
	single; mandatory	single; mandatory	single; mandatory	single; mandatory	single; optional, but recommended	multiple; mandatory	free text	multiple; mandatory	multiple; mandatory; free text; suggestions: principal investigator; data manager; team member; ...		

AQUARIUS INFRASTRUCTURES											
RI ID (automatic)	Research Infrastructure (controlled list)	Type (controlled list)	Lighthouse Region of interest (controlled list)	AQUARIUS Catalogue URL							following AQUARIUS Catalogue; to be completed before start
	single; mandatory	single; mandatory	multiple; mandatory	single; mandatory; will be provided							

EQUIPMENT POOL PER AQUARIUS RESEARCH INFRASTRUCTURE											
Equipment ID (automatic)	Platform Category (L06)	Device Type (L05)	Instrument (L22)	Instrument Other							to be completed before start
	single; mandatory	single; mandatory	single; mandatory	free text							multiple entry lines

OBSERVATION EVENTS																					
BOUNDING BOX																					
Event ID	Researcher ID	RI ID	Equipment ID	Discipline (P08)	Data Categories (C77)	Data s Other DD]	Date start (YYYYMMDD)	Date end (YYYYMMDD)	Sampling (Y/N)	Observation number/Volument (Y/N)	Post-processing (Y/N)	Quantity/Volume (C19)	Sea area (C19)	WEST	EAST	SOUTH	NORTH	Remarks	to be completed during TA project on a daily basis		
	single; mandatory	single; mandatory	single; mandatory	multiple; mandatory	multiple; mandatory	free text	single; mandatory	single; mandatory	single; mandatory	single; mandatory	multiple; free text	multiple; mandatory	multiple; mandatory	single; mandatory	single; mandatory	single; mandatory	single; mandatory	free text; Multiple entry lines			

Figure 3.1: TA Summary Log metadata model components

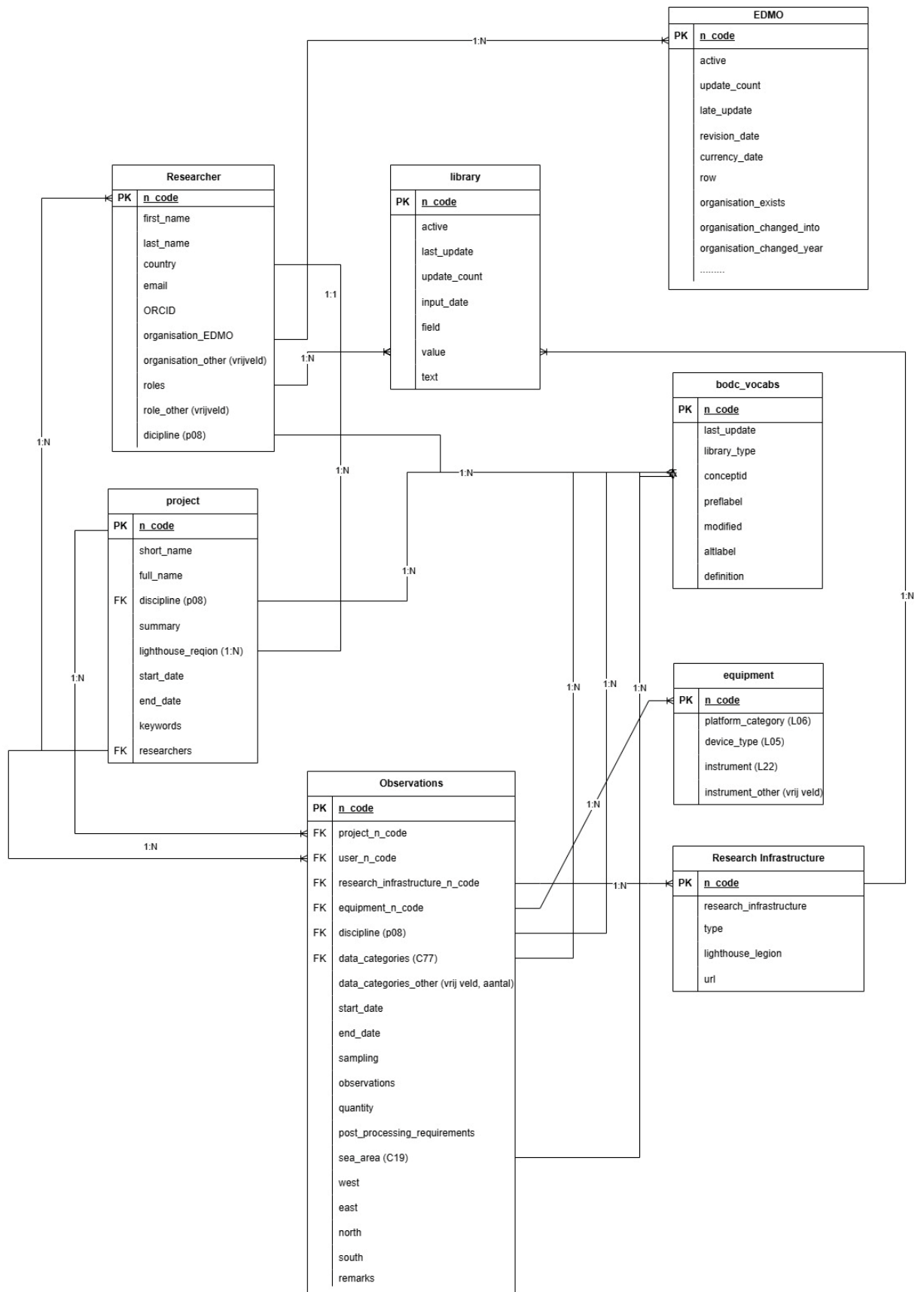


Figure 3.2: TA Summary Log metadata model

Remark: In case the TA project will involve scientific cruises with Research Vessels, then also a **Cruise Summary Report (CSR)** should be completed by the TA project PI within a month after the cruise. Traditionally, it is the Chief Scientist's obligation to submit a CSR not later than two weeks after the cruise. This provides a first level inventory of measurements and samples collected at sea. Currently, the Cruise Summary Reports directory, maintained by SeaDataNet together with its members, covers cruises from 1873 till today from more than 1,500 research vessels: a total of nearly 65,000 cruises, in all European waters and global oceans. This also includes historic CSRs from European countries that have been loaded from the ICES database from 1960 onwards.

3.2. APP development

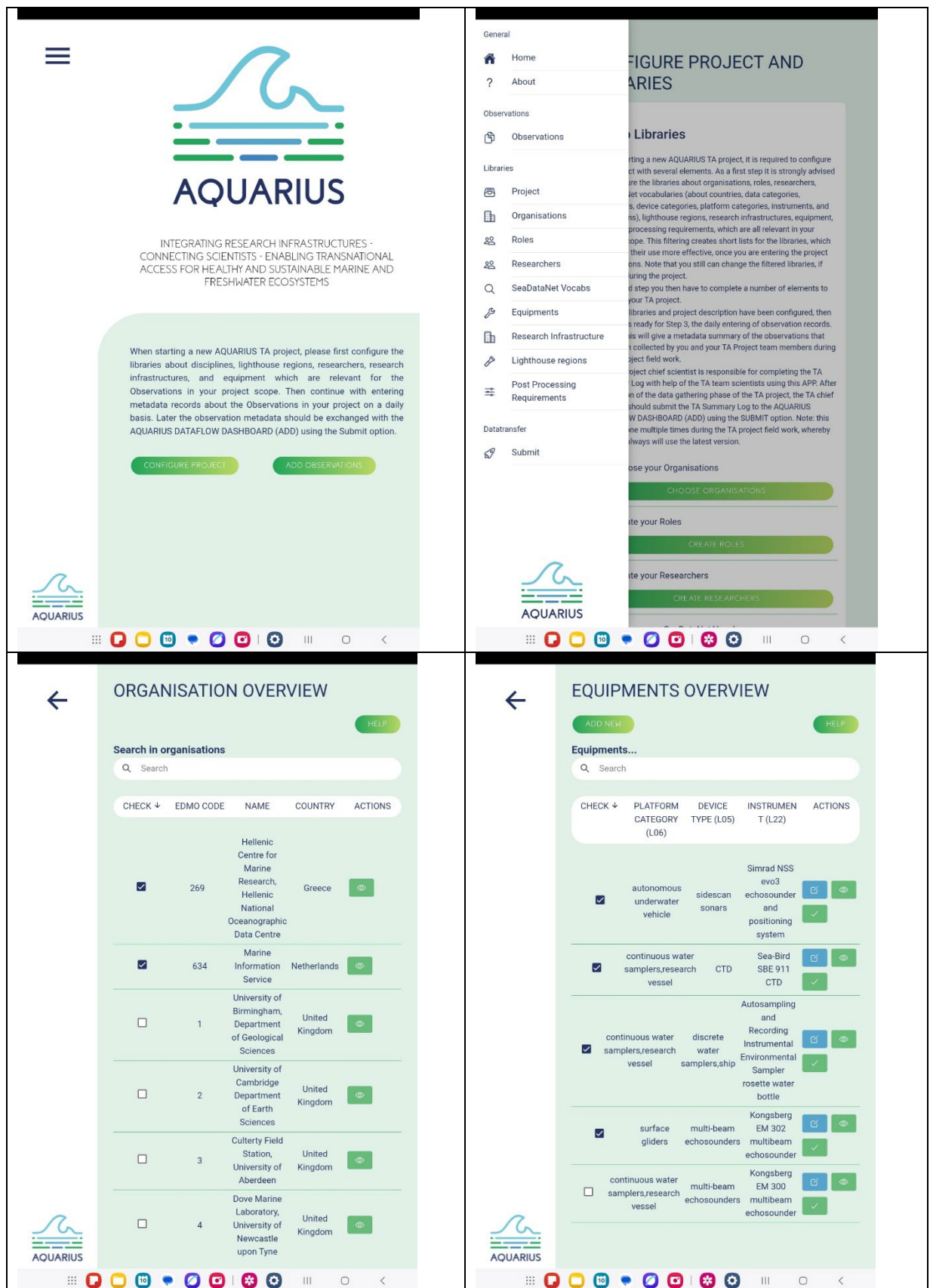
To provide an easy way and ensure coherency for completing the TA Summary Log on a daily basis, the TA teams are provided with an APP that they can install and configure on an ANDROID Tablet. Alternatively, TA teams can also borrow from MARIS such a Tablet with pre-installed APP. In the first 3 TA events in 2025, all TA teams have used their own tablets without issues. In practice of a TA event, it is the responsibility of the Principal Investigator (PI) or Chief Investigator (CI) to gather the required information from the team members and to populate the APP. In the preparatory phase before the TA event deployment, some training will be given by the assigned expert data centres as part of WP5.

The APP has been developed by MARIS using the IONIC open-source framework. The first step, when using the APP is that the TA teams filter the controlled vocabularies to keep smaller lists which are relevant for their TA event. For instance, the L22 vocabulary counts 2000+ instruments, while can be trimmed to the range to be used in the TA event. Another comparable functionality is that the TA teams in the preparatory phase can enter the names, affiliations (EDMO) and ORCIDs (if available) of the researchers in the TA event. Also, they can filter the AQUARIUS Research Infrastructures involved and the relevant Lighthouse Regions. This way, the TA event can be configured beforehand as a project with a number of researchers, instruments, platforms, etc and some general items such as project name, project acronym, and objectives.

The 'trimming' of the vocabulary lists will make it easier to compose and enter the metadata of the observations every day. An observation is a combination of several attributes, which should be selected from the trimmed lists, and some free texts, and geographical location (LAT-LON boxes). Of course, it is always possible to enlarge the trimmed lists during the TA event, where required. Also, free text alternatives can be entered for a few metadata fields, if the vocabularies are not sufficient.

The development of the APP has been completed in March 2025 and a fully working Beta version has been shared with the WP6 team for testing. In practice, the testing has been done by partners RBINS and Ifremer. After processing of identified issues, a second Beta version was tested again by Ifremer and RBINS in April 2025 with a successful outcome. The APP was released in May 2025. It was also presented during the 1st Data Management Training Workshop in June 2025, organised by WP5 for the scientific teams of the first group of TA events.

One of the activities has been to adopt the AQUARIUS styling. SSBE as WP7 leader has designed stylesheets for the APP, using some screenshots from the initial APP to elaborate. The following page gives screenshots of the finalised APP.



3.3. Exchange from APP to ADD

The APP can work stand-alone and also without internet connection. However, there should be made use of internet for updating (refreshing) the controlled vocabularies once in a while, and for submitting the TA Summary Log from the APP to the AQUARIUS Dataflow Dashboard (ADD). This should at least be done within 2 weeks after the TA event, but can also be done underway as each time the previous TA Log will be overwritten with the latest after successful import. For this, the ADD features a datahub API to be able to receive the APP JSON metadata files and to import these into the TA Summary Log database. Each TA event will have its own UUID by which the submissions from the different TA events can be separated.

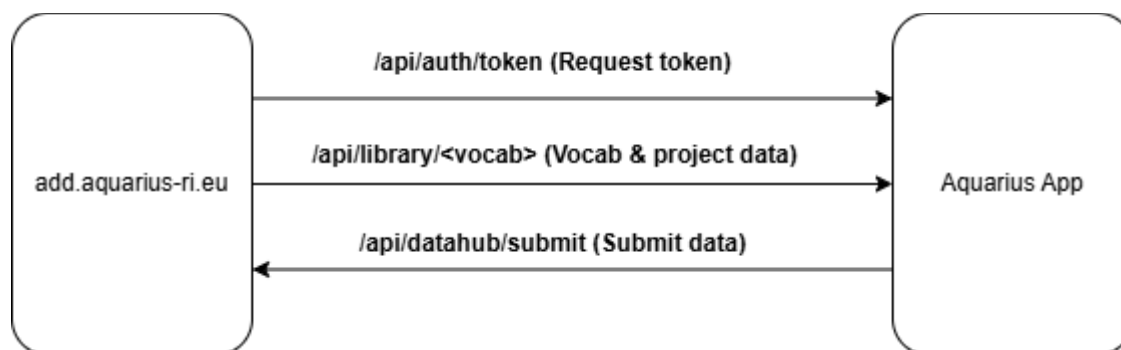


Figure 3.4: Exchange between APP and ADD API

Authentication:

POST /api/auth/token

The APP submits its hardware ID and shared secret to the authentication endpoint. The backend verifies these credentials and returns a JSON Web Token (JWT), which can be used for authentication at other endpoints.

Updating the vocabularies:

GET /api/library/<vocab>

This endpoint allows the APP to fetch different libraries. The available vocabularies are:

- EDMO Organisations
 - <https://add.aquarius-ri.eu/api/library/edmo>
- BODC Vocabularies (L05, L06, L22, C77, P08, C19)
 - <https://add.aquarius-ri.eu/api/library/bodc-vocabs>
- BODC Vocabulary Relations
 - <https://add.aquarius-ri.eu/api/library/bodc-related>
- Aquarius Research Infrastructures
 - <https://add.aquarius-ri.eu/api/library/research-infrastructure>
- Miscellaneous Definitions
 - <https://add.aquarius-ri.eu/api/library/library>
- Aquarius Projects
 - <https://add.aquarius-ri.eu/api/library/projects>
- Aquarius Researchers
 - <https://add.aquarius-ri.eu/api/library/researchers>
- Aquarius Equipment
 - <https://add.aquarius-ri.eu/api/library/equipment>

The endpoint is secured using an authentication token.

Submission of the TA Summary Logs:

POST /api/datahub/submit

This endpoint allows the app to submit project data. It is secured using the authentication token. The app submits:

- Project information
- Relations to observations, selections, and configurations

All data is sent as a JSON object, following the Aquarius data model. Example request:

```
{
  "project_uuid": "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX",
  "data": {
    <Aquarius project data>
  }
}
```

4. AQUARIUS Dataflow Dashboard (ADD)

The AQUARIUS Dataflow Dashboard (ADD) has been developed by MARIS as a dedicated platform, integrated in the AQUARIUS website, to follow progress of the data management flow scheme from planning stage through to publishing of results for each awarded TA project.

For this purpose, the following sub-domain has been registered and activated from a MARIS server: <https://add.aquarius-ri.eu>

The ADD platform has been embedded in the AQUARIUS website and navigation, so that users can benefit from a seamless experience. Again, SSBE as WP7 leader, has made and provided to MARIS designs and stylesheets, for the main structure of the ADD platform. Also, SSBE has made and delivered some artwork for the ADD homepage.

The ADD itself will contain up-to-date and public information about TA projects and their progress. The ultimate goal of the ADD is to give discovery and public access to research data sets as collected and processed and data products as generated by the TA research teams as part of the AQUARIUS TA projects. The following table gives an overview of the information attributes for the ADD.

See also D6.2 (<https://zenodo.org/records/13642869>)

Attribute	Links	Remarks
AQUARIUS TA Project ID	Unique ID per AQUARIUS TA project	Contract ID
TA Project Information	Dedicated link to retrieve a narrative about the scheduled TA project. The narrative should include at least the TA project objectives, who are involved, which lighthouse regions, which scientific disciplines, and which RI facilities are going to be used.	Factsheets are made by SSBE in dialogue with the TA teams after contract signature. These are hosted in AQUARIUS Website. The ADD then includes links.
Date start	Start date of the TA data acquisition activities	From TA events planning (can be adjusted in time for logistics)
Date end	End date of the TA data acquisition activities	From TA events planning (can be adjusted in time for logistics)
DMP phase 2	Completed Data Management Plan Phase for the scheduled TA project	Initial DMP will be refined in cooperation between TA teams and Assigned Data Centres to completed DMP. MARIS will publish the DMPs.

Attribute	Links	Remarks
TA Data Summary Log	Summary index to the collected/generated data and relevant documentation, such as who, when, where, how, etc. from the TA data acquisition activities	Metadata will be collected by TA teams using the AQUARIUS APP. This will be preceded by an introduction and short training to TA teams. After completion or underway TA teams can submit an export to the API hosted by MARIS with Viewing Service that is linked to the ADD
Cruise Summary Report	Dedicated link to retrieve details from SeaDataNet Cruise Summary Reports database, in case of TA cruise with research vessel	Speaks for itself; within 30 days after finishing cruise
Research data package published in EMODnet Ingestion	Dedicated link(s) to retrieve details from metadata and data sets as submitted by TA Teams and published in the EMODnet Ingestion service	Speaks for itself; progressing results of TA teams working with Assigned Data Centres to make available and generate FAIR data for publishing under CC-BY-4.0. Also, relation with Training WP
Research data package in SeaDataNet SEANOE	Dedicated link(s) to retrieve details from metadata and data sets as submitted by TA Teams in the SeaDataNet SEANOE Data Publishing service	Speaks for itself; progressing results of TA teams working with Assigned Data Centres to make available and generate FAIR data for publishing under CC-BY-4.0. Also, relation with Training WP
Elaborated research data as published in European data management infrastructures	Dedicated link(s) to retrieve standardised metadata and data from TA projects in SeaDataNet, EurOBIS, ELIXIR-ENA, ICOS-Marine, Copernicus INSTAC services for data discovery and access	Speaks for itself; progressing results of TA teams working with Assigned Data Centres to make available and generate FAIR data for publishing under CC-BY-4.0. Also, relation with Training WP
Elaborated open science data products as published in Zenodo	Dedicated link(s) to retrieve standardised metadata and open science data products as generated through Blue-Cloud from TA projects in Zenodo for discovery and access	Later in the project, TA teams will be invited for joining the Blue-Cloud VRE for open science with their data in combination with other public data resources. Also, relation with Training WP

Table 4.1: Overview of the contents for the AQUARIUS Data Flow Dashboard

The following gives some screenshots from the ADD:



Figure 4.1: Homepage of the AQUARIUS Dataflow Dashboard

TA Event	Research Infrastructure	Date start	Date end	Details
DENGATE	RV G. O. Sars, AUV Barabag, Glider Yoko	2027-01-01	2028-02-28	View project
ABACUS 2026 Mission 2	SOCIB Glider Facility	2026-09-08	2026-10-03	View project
ABACUS 2026 Mission 1	SOCIB Glider Facility	2026-05-15	2026-06-09	View project
BASEVOC	Uto Marine and Atmospheric Research Station	2025-04-01	2025-09-28	View project
ASTRA	RV Tuburak Marmara	2025-09-05	2025-09-20	View project
STREAM-DANUBE	RV Mase Nigun	2025-09-01	2025-09-13	View project

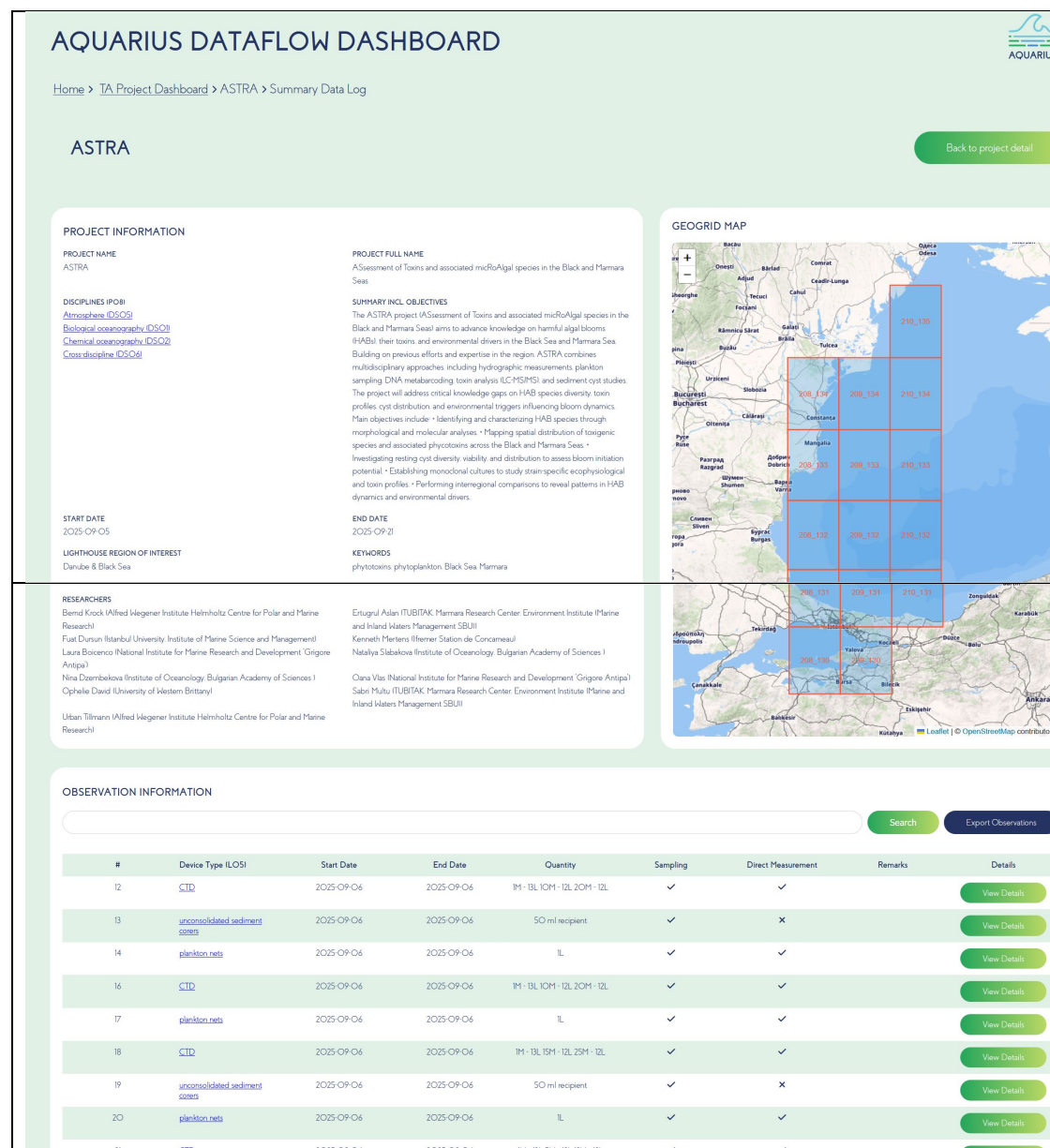
Figure 4.2: Overview of TA events at the AQUARIUS Dataflow Dashboard

For each TA event, there is up-to-date and public information on the projects and their progress. The ultimate goal is to give discovery and public access to research data sets as collected and processed and data products as generated by the TA research teams as part of the AQUARIUS TA projects.

ASTRA

Project Info	
TA Project ID	ASTRA
TA Project Information	
Start Date	2025-09-05
End Date	2025-09-20
Data Management Plan	Download file
Summary Data Log	Summary Data Log
Cruise Summary Report (RVs)	-
Original Research Data in EMODnet Ingestion	-
Original Research Data in SeaDataNet SEANOE	-
Elaborate Research Data in European repositories	-
Elaborate Open Science Data Products	-
Research Infrastructure	RV Tubitak Marmara

Figure 4.3: Information page for each TA event



OBSERVATION INFORMATION

[Search](#) [Export Observations](#)

#	Device Type (LOSI)	Start Date	End Date	Quantity	Sampling	Direct Measurement	Remarks	Details
12	CTD	2025-09-06	2025-09-06	1M · 1L 10M · 12L 20M · 12L	✓	✓		View Details
13	unconsolidated sediment corers	2025-09-06	2025-09-06	50 ml recipient	✓	✗		View Details
14	plankton nets	2025-09-06	2025-09-06	1L	✓	✓		View Details
16	CTD	2025-09-06	2025-09-06	1M · 1L 10M · 12L 20M · 12L	✓	✓		View Details
17	plankton nets	2025-09-06	2025-09-06	1L	✓	✓		View Details
18	CTD	2025-09-06	2025-09-06	1M · 1L 15M · 12L 25M · 12L	✓	✓		View Details
19	unconsolidated sediment corers	2025-09-06	2025-09-06	50 ml recipient	✓	✗		View Details
20	plankton nets	2025-09-06	2025-09-06	1L	✓	✓		View Details
21	CTD	2025-09-06	2025-09-06	1M · 1L 15M · 12L 25M · 12L	✓	✓		View Details

Figure 4.4: TA Summary Log of selected TA event

The AQUARIUS Dataflow Dashboard (ADD) has been developed by MARIS in consultation with the WP6 team and as a dedicated platform, integrated in the AQUARIUS website. It allows users to follow progress of the data management flow scheme for each TA event from planning stage through to publishing of results for each awarded TA project. The ADD can be found at: <https://add.aquarius-ri.eu> and using the navigation at the AQUARIUS website. It was launched in July 2025 with an online Content Management System (CMS) and a front end, including an API for receiving TA Summary Log submissions from the APP.

5. Conclusions

This upgraded **Deliverable D6.3** documents the sitemap and achieved development of the **AQUARIUS Dataflow Dashboard (ADD)**. It also documents the metadata model and the achieved development of the **TA Summary Log APP**. The APP and the ADD were ready, well tested and operational before M16, when the expected TA events were deployed as a follow-up of the 1st Call. Since the release, a number of improvements have been made following feedback and experienced issues. The constellation of APP and ADD is operational and so far has been used successfully for the first 3 TA events.