Restricted Distribution IOC/IODE-MG-2022/4

 Oostende, 16 March 2022

English only

**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)**

**Management Group Meeting
Online, 21-22 March 2022**

**PROJECT REPORTING REVIEW**

All approved IODE projects, activities and persistent projects, whether ongoing or ending, must meet the evaluation criteria described in IOC Manuals and Guides 81 (*Procedures for Proposing and Evaluating IODE Projects and Activities (Revised edition)*) and will be evaluated annually by the IODE-MG Executive based on the reports provided. Annual reports describe a general overview of the projects ,assumptions and risks and the current status of the implementation of the workplan.

The MG will discuss the results of the evaluation of IODE projects. The following Annual Project Reports for 2021 have been submitted:

**Projects**

[Ocean Biodiversity Information System (OBIS) 2](#_Toc96499576)

[GODAR 4](#_Toc96499577)

[World Ocean Database (WOD) 5](#_Toc96499578)

[Global Temperature and Salinity Profile Programme (GTSPP) 7](#_Toc96499579)

[Global Ocean Surface Underway Project (GOSUD) 10](#_Toc96499580)

[International Coastal Atlas Network (ICAN) 11](#_Toc96499581)

[International Quality-controlled Ocean Database (IQuOD) 14](#_Toc96499582)

[Ocean Data Portal (ODP) 17](#_Toc96499583)

[IOC Ocean Best Practices System (OBPS) 18](#_Toc96499584)

[aQUADocs 23](#_Toc96499585)

[IODE-OceanExpert 27](#_Toc96499586)

[IODE Quality Management Framework 29](#_Toc96499587)

[ODIS Catalogue of Sources (ODISCat) 31](#_Toc96499588)

[OceanTeacher Global Academy (OTGA) 33](#_Toc96499589)

[Ocean InfoHub Project (OIH) 35](#_Toc96499590)

[Pacific Islands Marine Bioinvasions Alert Network (PacMAN) 38](#_Toc96499591)

[ODINBLACKSEA 41](#_Toc96499592)

[ODINWESTPAC 44](#_Toc96499593)

[ODINAFRICA 46](#_Toc96499594)

[ODINCARSA-LA 47](#_Toc96499595)

[ODINCINDIO 49](#_Toc96499596)

All Annual Reports are collated in Annex I.

ANNEX I. IODE ANNUAL PROJECT REPORTS (2021)

# Ocean Biodiversity Information System (OBIS)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|  Ocean Biodiversity Information System (OBIS) |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| IOC Resolution XXV-4 (June 2009) and IODE-XXI.2 (March 2011) https://obis.org/about/iode-xxi-2/ |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Ward Appeltans, 31 Jan 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| New technical developments and capabilities in OBIS (new bioinformatics pipelines) leveraged through the Flanders’ government funded PacMAN project (Pacific Islands Marine Bioinvasions Alert Network) now allows OBIS to embark on new activities and transitioning OBIS into supporting operational activities, such as supporting local biodiversity monitoring and evaluation based on (e)DNA. A new FUST/FUT project “eDNA expeditions in marine World Heritage sites” will start in 2022 with the aim to engage citizen-scientists in revealing the richness and vulnerability of biodiversity for the conservation of UNESCO sites in a changing climate. Both PacMAN and eDNA expeditions are endorsed UN Ocean Decade projects. The OBIS decade action proposal is under development and will use the information and recommendations from a wide stakeholder consultation assessment, executed by SeaScape Belgium. The cooperation with GBIF, including a joint marine session at the GBIF global nodes meeting in June 2021, resulted in a technical update of the Integrated Publishing Toolkit, allowing GBIF publishers to indicate if their marine datasets can flow to OBIS. OBIS will start harvesting GBIF publishers in 2022. OBIS contributed to the GBIF guideline on the DNA Derived extension to DarwinCore. We organized a genetic data webinar explaining the new DNA DwC extension and how to access these data through OBIS (r-package and portal). We now already have 22 DNA datasets published in OBIS.In December 2021, Ms Serita Van Der Wal (South Africa) joined the OBIS secretariat. She will support us in (i) managing the information about observing systems, networks, and data assets provided via a portal for the Global Ocean Observing System, Biology and Ecosystems Panel (GOOS BioEco) and (ii) assist us with connecting the GOOS biological networks with OBIS. A training officer will be recruited in 2022 to develop at least 50 short tutorials and a step-by-step guide to publishing and accessing data to OBIS. An intro and outro video and 3 back drops have been created by Science Crunchers to aid in the branding of these training materials. The back drops are popular within the OBIS community and often used in online meetings. |

1. *Assumptions and risks*

|  |
| --- |
| The lack of funding for OBIS core activities continues to put a lot of pressure on the secretariat, especially on the data manager. We have been successful in attracting extra-budgetary funding through projects that help support the further development of the OBIS infrastructure. However, no funds cover daily maintenance and help-desk support to users and OBIS node managers. OBIS relies on the voluntary commitment of OBIS node managers and experts. The various OBIS task teams are struggling to find chairpersons that have the time to lead the activities, and some task teams have made very little progress over the last years.The recent budget cuts at IODE means we will no longer be able to sponsor the travel of OBIS node manager to attend SG-OBIS meetings. This is going to be problematic for many OBIS nodes and is likely going to have a major impact in keeping the network engaged.  |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. To be the most comprehensive gateway to the world’s ocean biodiversity and biogeographic data and information required to address pressing coastal and world ocean concerns. |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Number of species occurrence and measurement or fact records in OBIS | 83.9 M presence records (+20M)162.3 M MoF records (+95M) |
| PI2. Number of datasets | 4.383 datasets (+514)  |
| PI3. Number of active OBIS nodes | 28 (82%) (+2) |
| PI4. Number of papers citing OBIS | 1.659 (+121) |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: Annual session of the IODE Steering Group for OBIS and OBIS Executive Committee |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: session organized, report including workplan agreed and published | Postponed |
| A1.2: OBIS Executive Committee meeting and informal SG-OBIS meeting, report agreed and published | Completed  |
| **Report on status of activities. Problems experienced and measures taken:** |
| -Due to COVID-19, the 10th session of the SG-OBIS has been postponed to 17-20 May 2022, which will be organized as a fully online meeting.-The 4th OBIS-EC meeting was held on 26-27 May 2021 (online), and was organized as an informal SG-OBIS meeting. The report is available at <https://oceanexpert.org/document/28655> |
| **Milestone/deliverable/work package** |
| M1: |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: |  |
| A2.2: |  |
| A2.3: |  |
| **Report on status of activities. Problems experienced and measures taken** |
|  |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 1 Feb 2022

# GODAR

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line). Sections 10 and 11 are to be completed only for the annual report submitted prior to the IODE session. Attach any additional project documentation.

*Submitted by: Hernan Garcia, NOAA NCEI, Silver Spring, MD 20910, USA*

*1. Title of project/activity and acronym*

|  |
| --- |
|  Global Ocean Data Archeology and Rescue (GODAR) |

*2. Project established by (provide reference to IODE session)*

|  |
| --- |
| IODE Recommendation : IODE-XIV.DR.3 (1992) |

*3. Project leader(s)*

|  |
| --- |
| Hernan Garcia |

*4. Members of the project Steering Group (provide link to IODE project page)*

|  |
| --- |
| not managed by a steering group |

*5. Objectives of the project*

|  |
| --- |
| Increase the volume of quality controlled historical oceanographic profile data available to climate change and other researcher; in particular Essential Ocean Variables |

*6. Activities implemented and accomplished milestones*

|  |
| --- |
| 1. Collaboration with U.S. and international groups continues to increment the volume and quality of the data and metadata in the World Ocean Database (WOD). These collaborations include the International Quality Controlled Ocean Database (IQuOD) group.2. Emphasis on obtaining historical data for the Arctic and historical data from NOAA ships/projects3. Succesful capacity building and productive data sharing with Instituto del Mar del Peru (IMARPE)4. Collaboration continues with European partners (ICES, SEADATANET, EMODNET) to share open-access historical oceanographic data for aggregation with WOD. |

*7. Problems experienced and measures taken*

|  |
| --- |
| 1. GODAR functions with the voluntary cooperation of worldwide investigators and data managers. Cooperation has greatly increased over the last few years. The main factor limiting the data flow through GODAR is lack of resources and the establishisment of formal worldwide data sharing flow process.2. Agreements with national oceanographic data centers, primary investigators, projects, have not always been sufficient to provide for the routine flow of open-access data. The legal process is too slow. It would be more efficient if the agreements would be faciltated through IODE and World Data Service for Oceanography.3. Data digitation is expensive and funding resources limited. Carla Coleman, a highly skilled data digitizer, the sole in house digitizer for the GODAR project, died in 2018. There is, as of yet, no replacement for her. Alternate solutions are needed. However, much data remains at risk of being lost particulalry in deve;loping countries. |

*8. Results achieved*

|  |
| --- |
| 1. Obtaining comprehensive data and metadata for worldwide oceanographic measurements remains a high priority and, in many cases, a difficult endeavor. This work is ongoing as part of WOD.  2. WOD is an impactful and well utilized reference database. The WOD Team receives comments from data users about data and metadata problems. We use this information to improve WOD. 3. GODAR works in tandem with the IODE WOD project and the World Data Service for Oceanography hosted at NOAA NCEI. The timing of data added to WOD through GODAR varies. The delineation between historical data handled by WOD through GODAR and recent data handled directly by WOD is not straight forward. 4. GODAR added 1359328 historical and modern ocean profile casts to the WOD between January 2018 and December 2021. The geographic distribution of the data is shown in Figure 1 (attached).CTD: 37871 (Conductivity, Temperature, Depth) DRB: 42201 (Drifting Buoys) GLD: 1226621 (Gliders) OSD: 38828 (Ocean Station Data) UOR: 30 (Undulating Oceanographic Recorder) XBT: 13777 (Expendable Bathytermograph) Total: 1359328 |

*9. Deliverables produced*

|  |
| --- |
| World Ocean Database 2018 final version, with results of GODAR, was published March, 2019 |

***----------THE FOLLOWING SECTIONS ARE TO BE COMPLETED FOR THE ANNUAL REPORT PRIOR TO IODE SESSION----------***

*10. Draft text for the annotated agenda and summary report (TO BE USED FOR REPORTING TO THE IODE SESSION)*

|  |
| --- |
| The Global Ocean Data Archeology and Rescue (GODAR) project continued through 2021, albeit with reduced capacity. Significant additions of digitized and digital source data were compiled for the World Ocean Database through the World Data System. The UN Decade of Ocean Science provides an excellent opportunity for renewing IODE efforts in facilitating data flow through GODAR into the World Ocean Database. The recent Feb 2022 World Data Conference brought together several data providers. In addition, efforts underwya to revize the IOC data policy may offer an opportunity to reach out to data providers to share data with WOD. |

*11. Work plan and budget for the next intersessional period*

|  |
| --- |
| Budget requested from IODE during the next biennium (starting after the next IODE Committee Session) (US$) 5,000Expected IODE Project Office management staff time requested during the next biennium (persons-months) 0Other resource contributions identified (financial or in-kind including staff): resource dependent |

Signed by Project Leader. Hernan Garcia

Date. 03/13/2022

*For IODE use only.*

Date received: 16 MAR 2022



Profiles added to the World Ocean Database through GODAR from January 2018 and December 2021.

#  World Ocean Database (WOD)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|     World Ocean Database (WOD)     |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
|     IODE Recommendation : IODE-XVI.6 (2000)   |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Tim Boyer 2022/01/20 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| assemble and disseminate the World’s largest unrestricted access dataset of uniformly formatted and quality controlled historic and recent ocean profile data. |

1. *Assumptions and risks*

|  |
| --- |
| Free and open exchange of oceanographic profile data between IODE members. Risk – inability to exchange pertinent data due to convention, formatting complications, data management resources |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Comprehensive historic and recent ocean profile data inventory delivered in a timely and useful manner |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1.Number of oceanographic casts added to the World Ocean Database in 2021 | **delivered** |
| PI2.Number of users utilizing data | **delivered** |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: Reach a total of 19 million historic and recent oceanographic casts |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1:Enter quarterly updates from Argo, GTSPP, tropical moored buoys into the World Ocean Database | Completed in January, May, August, and November, 2021 |
| A1.2:Enter data from other National Oceanographic Data Centers and Associated Data Units, projects, institutes and primary investigators | Completed as able (see details below) |
| A1  |  |
| **Report on status of activities. Problems experienced and measures taken:** 889,359 casts of ocean profile data were added to WOD between January, 2021 and November, 2021 to bring the total number of casts to 17.7million. (A cast is a set of profiles - temperature and/or salinity and/or oxygen and or nutrients. etc. - taken at the same geographic location at the same time. The breakdown by data type:Bottle/low-resolution CTD/low-resolution XCTD: 3,638 castsHigh-resolution CTD: 12,521 castsXBT: 7,494 castsInstrumented pinnipeds: 42,396 castsTropical moored-buoy (daily means): 24,154 castsArgo profiling floats: 171,890 castsArctic drifting buoys: 11,286 castsGliders: 592,980 castsInformation on each data type can be found in the World Ocean Database 2018 (WOD18) Introduction: https://www.nodc.noaa.gov/OC5/WOD/docwod.htmlData over a global geographic distribution were added since the last IODE meeting (Figure 1 - attached). The GODAR report for the present IODE meeting will go into more detail on recovery of historic data added to WOD.Major sources of recent (uploaded within 3 months of measurement) data in WOD continue to be the Global Temperature and Salinity Profile Project (GTSPP, 71,862 casts), the Argo program (171.890 casts), and the Pacific Marine Environmental Laboratory’s tropical moored buoy program (NOAA/PMEL, 24,154 casts). [Note that GTSPP casts in WOD are far less than the number of oceanographic stations new to GTSPP for 2021, as the majority of GTSPP stations are single level coastal stations, and not ocean profile casts.) Major sources which are updated quarterly in WOD include the CLIVAR and Carbon Hydrographic Data Office (CCHDO, 6,694 high quality bottle/CTD casts), and the Further discussion of WOD updates can be found in the GODAR report. One major source from years past which has not been available in 2021 is the International Council for the Exploration of the Seas (ICES).Flow of glider data from the Australian Integrated Marine Observing System (IMOS), the US Integrated Ocean Observing System (IOOS) Glider Data Assembly Center (DAC), and the European's Everyones Glider Organuzation (EGO) has been regularized and the amount of glider data in the WOD has increased steadily adding an important coastal component to the WOD. |
| **Milestone/deliverable/work package** |
| M1: Distribute for use > 300 million oceanographic casts/month  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1:maintain WODselect for subsetting and delivering data | Completed |
| A2.2:distribute data through THREDSS and cloud services | Completed |
| A2.3:Develop World Ocean Database Cloud as part of the U. N. Decade of the Ocean | In Progress |
| **Report on status of activities. Problems experienced and measures taken** WODselect, the subsetting and access tool for WOD: https://www.ncei.noaa.gov/access/world-ocean-database-select/dbsearch.html continued to be heavily used in 2021 with near to or more than 200 million casts downloaded monthly (Figure 2) in that period Figures 3, 4 breakdown download statistics to give a better idea who is utilizing WODselect.Access through Amazon Web Services (AWS) cloud has been established and maintained in2021: . <https://registry.opendata.aws/noaa-wod/>**The WOD program was accepted as a contribution to the U. N. Decade of the Ocean. The concept of a more participatory data ingest and quality management for the WOD a platform for analysis tools, and a means of free and equitable data distribution and use was initiated and is in progress.** |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 21 Jan 2021

# Global Temperature and Salinity Profile Programme (GTSPP)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|  Global Temperature and Salinity Profile Programme (GTSPP)  |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| Established through Recommendation IODE-XIII.4 (https://iode.org/index.php?option=com\_content&view=article&id=310:iode-steering-group-for-gtspp&catid=10&Itemid=58) |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Peter Chu on 14 February 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| (a.) To provide a timely and complete data and information base of ocean temperature and salinity profile data. (b.) To implement data flow monitoring system for improving the capture and timeliness of real-time and delayed-mode data. (c.)To improve and implement agreed and uniform quality control and duplicates management systems. (d.) To facilitate the development and provision of a wide variety of useful data analyses, data and information products, and data sets. |

1. *Assumptions and risks*

|  |
| --- |
| GTSPP data centres such as in NCEI (USA), Japan Meteorological Agency, Marine Environmental Data Section (Canada) have made the GTSPP program strong and low risk. |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Continued GTSPP daily operations to process and load both real-time and non-real-time temperature and salinity data into the GTSPP Continuously Managed Database (CMD).(b.) Maintained the project web sites at https://www.nodc.noaa.gov/GTSPP/ and http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/gtspp/index-eng.htm (c.) Populated the outcomes of the comparison between observed versus model-simulated temperature data for the North Pacific Region at http://ds.data.jma.go.jp/gmd/gtspp/data/index.html. |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. |  |
| PI2. |  |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: (a.) Populated both real-time and non-real-time temperature and salinity data and maintained the project web sites at https://www.nodc.noaa.gov/GTSPP/ and http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/gtspp/index-eng.htm. (b.)Published the results of comparison between temperature observations circulated on the GTS and model-simulated temperature data at http://ds.data.jma.go.jp/gmd/gtspp/data/index.html |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: |  |
| A1.2: |  |
| A1.3: |  |
| **Report on status of activities. Problems experienced and measures taken:** |
| Missing Argo data in the CMD |
| **Milestone/deliverable/work package** |
| M1:NCEI has resolved this problem. |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: |  |
| A2.2: |  |
| A2.3: |  |
| **Report on status of activities. Problems experienced and measures taken** |
|  |

***----------THE FOLLOWING SECTIONS ARE TO BE COMPLETED FOR THE ANNUAL REPORT PRIOR TO IODE SESSION---------***

1. ***Annex II Part B****. Submission of new workplan and budget for the next intersessional period.*

|  |
| --- |
| **Project Outcomes** |
| O1. During the inter-sessional period the following activities were implemented: (i) Continued GTSPP daily operations to process and preserve both real-time and non-real-time temperature and salinity data and maintained the project web sites at http://www.nodc.noaa.gov/GTSPP/ and http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/gtspp/index-eng.htm; (ii) Populated the outcomes of the comparison between observed versus model-simulated temperature data for the North Pacific Region at http://ds.data.jma.go.jp/gmd/gtspp/data/index.html. |
| **Performance Indicators (2-5 maximum)** |
| PI1. |
| PI2 |
| **Workplan & Budget** |
| **Milestone/deliverable/work package** |
| M1/D1/WP1:The GTSPP future work plan is in line with the IODE-XXVI work plan. The the GTSPP will conduct the action items from the meeting during the next inter sessional period and continue its functions including, but not limited to, (a.) Real-time data acquisition from the Global Telecommunication System, (b.) Submission of the delayed-mode data from the GTSPP participants, (c.) Provide data services by the U.S. National Centers for Environmental Information and the Marine Environmental Data Section of the Oceans Science Branch, Fisheries and Oceans, Canada, (d.) Publish the results of comparison between temperature observations circulated on the GTS and model-simulated temperature data by the Japan Meteorological Agency, (e.) Continue to integrate the GTSPP CMD and the WOD (World Ocean Database), and, (f.) Publish the GTSPP CMD system document. |
| **Activities (include start-end date if applicable)** | **Responsible** | **Budget (requested from IODE) USD** |
| 20xx | 20xx |
| A1.1: |  |  |  |
| A1.2: |  |  |  |
| A1.3: |  |  |  |
| **Assumptions and risks** |
|  |
| **Milestone/deliverable/work package** |
| M2/D2/WP2: |
| **Activities (include start-end date if applicable)** | **Responsible** | **Budget (requested from IODE), USD** |
| 20xx | 20xx |
| A2.1:  |  |  |  |
| A2.2: |  |  |  |
| A2.3: |  |  |  |
| **Assumptions and risks** |
|  |
| **Total budget (requested from IODE)** |  |  |

1. *Draft text for the annotated agenda and summary report (TO BE USED FOR REPORTING TO THE IODE SESSION)*

|  |
| --- |
| During the inter-sessional period the following activities were implemented: (i) Continued GTSPP daily operations to process and preserve both real-time and non-real-time temperature and salinity data and maintained the project web sites at http://www.nodc.noaa.gov/GTSPP/ and http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/gtspp/index-eng.htm; (ii) Populated the outcomes of the comparison between observed versus model-simulated temperature data for the North Pacific Region at http://ds.data.jma.go.jp/gmd/gtspp/data/index.html ; (iii) Will conduct the Sixth Session of the GTSPP steering group, 28 March – 1 April 2022 on line.  |

Signed by Project Leader. Peter Chu

Date. 14 Feb 2022

*For IODE use only.*

Date received: 16 Feb 2022

# Global Ocean Surface Underway Project (GOSUD)

(no report received)

#  International Coastal Atlas Network (ICAN)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|  International Coastal Atlas Network |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| ICAN is an IODE project since 2013, the activity started 2006 and is ongoing |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Kathrin Kopke, Tanya Haddad (co-chairs of the ICAN Steering Group) |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The 2022 year was a good one for ICAN activities and community engagement. Overall, we had a very productive programme, with high participation from steering group members and a very successful ICAN workshop in September of 2021. |

1. *Assumptions and risks*

|  |
| --- |
| For 2022 we are under the assumption that the global pandemic is still in progress and that international travel will remain challenging for many participants. Nevertheless, our project has always operated to some degree via remote participation, and with the success of the 2021 workshop we are now confident that we can continue in this manner until conditions allow for more direct interactions once again. Given this new reality, we have shifted some of our expenditures to allow for additional remote capacity via a virtual programs and webinar support. |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Network stewardship is active and healthy |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Participation Numbers | Participation from > 150 members |
| PI2. Participation Geography | Participation from > 40 countries |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: ICAN Governance  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: ICAN Steering meetings | 13 meetings completed in 2021 |
| A1.2: ICAN Co-Chairs  | 45 meetings completed in 2021 |
| **Report on status of activities. Problems experienced and measures taken:** |
| **ICAN Co-Chair meetings**The ICAN co-chairs meet weekly. This arrangement has worked well to respond to action items, prepare materials for Steering Group meetings, and keep work moving. Anyone who would like to work with ICAN is invited to participate by contacting an ICAN co-chair with information about what week they would like to join us.**ICAN Steering Group Meetings**The ICAN Steering group generally meets once per month, however in summer 2021 frequency was increased to twice per month to acount for additional work required for planning and hosting of ICAN 9 in September, 2021. The Steering Group was highly motivated to conduct the ICAN 9 workshop in 2021, given the postponement from 2020 due to the upheavals caused by the COVID-19 pandemic. In addition, the steering group prepared for a number of 2022 activities, including sumission of a successful application to Sea Grant for the hosting of a Sea Grant “Summer Scholar” in summer 2022. ***NOTE Modification of 2022 Budget sought:*** *ICAN SG has desired to host a summer intern for several years, and we believe participation in the NOAA Sea Grant Summer Scholars program is an effective way to match with qualified candidates. Based on our successful application, Sea Grant has selected ICAN as a host of a potential Summer Scholar, and applicants will be selected by Sea Grant and matched to ICAN for 10 weeks during the summer of 2022. The intership will be virtual to accommodate a wide range of candidates, and Sea Grant has indicated a willingness to place up to two Scholars with ICAN if enough suitable candidates are available. As a result of this development ICAN SG would like to reprogram USD $3,500 from the 2022 “Expert Travel” budget line item, in support of the hosting of the Summer Scholar. This expenditure will leverage over USD $13,000 of Sea Grant funds for the cost of two summer scholars.*  |
| **Milestone/deliverable/work package** |
| M2: ICAN Outreach and Network Activities |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: ICAN 9 Workshop | Complete |
| A2.2: ICAN Tech Activities | 8 meetings, 3 mini-workshops completed 2021 |
| A2.3: Regional and Individual Atlas Outreach & Assistance | 15 meetings completed 2021 |
| A2.4: ICAN Website, Social Media and Newsletters  | Ongoing / In Progress  |
| A2.5: Conference Participation | As needed / Requested |
| **Report on status of activities. Problems experienced and measures taken** |
| **ICAN 9 Workshop** After twice being postponed in 2020 due to COVID-19 disruptions, the ICAN 9 Workshop was conducted with much success on 27,28,29 September, 2021. The meeting involved over 35 invited speakers over the course of 3 days, was attended by over 150 participants from over 40 countries, and live-streamed in 4 languages. Each day focused on a specific topic relevant to the overarching theme: **Local to Global - Benefits of Coastal Web Atlas Sharing & Connectivity** where day 1 was dedicated to introduce new and established resources and connect with the wider coastal web atlas (CWA) community, day 2 explored how our CWA’s can contribute to and link in with the UN Decade of Ocean Sciences and the Sustainability Goals and day 3 explored how Atlases can share their content more effectively and make connections to the OceanInfoHub project.***NOTE Modification of 2022 Budget sought:*** *In order to make best use of conference proceedings and work products the ICAN SG would like to re-program USD $2,500 from the 2022 “Expert Travel” line item for development of outreach material derrived from the ICAN 9 workshop and other steering group work products***ICAN Tech**ICAN Tech has not met as a group on a regular schedule in 2021, however the group hosted several Ocean InfoHub introductory sessions for interested members, including during ICAN 9. ICAN Tech members also participated in assorted other OIH Tech meetings, particularly related to OIH WP2, and members also participated in or contributed to the OTGA course on Implementing the Ocean Data and Information System (ODIS) Architecture, conducted in October 2021**Regional and Individual Atlas Outreach & Assistance**ICAN Tech and Steering Group members continue to participate at both the local Atlas project scale, as well as at regional scale. This work included ICAN co-Chair paricipation in discussions with staff from EMODNET and the European Atlas of the Seas on future coordination activities, ICAN Tech assistance with the scoping of technical requirements for implementing the ODIS Arch within the African Coastal Marine Atlas(ACMA), and 3 days of contracted online training related to the GeoNode platform. conducted by GeoSolutions.**ICAN Website, Social Media and Newsletters**ICAN continues to manage and update the project website (https://ican.iode.org/), which proved very useful in 2021 not only promoting the ICAN 9 workshop but providing detailed information for particpants in four languages (event section), which was supported via social media posts in four languages linking back to the detailed website posts. ICAN social media (Twitter: @ICANAtlas) gained 74 new followers in 2021 and documented in real time on ICAN 9 activties, which generated 55 original posts during ICAN 9, resulting in 3304 ICAN Twitter profile visits and 13.5K Tweet impressions (number of times a tweet appeared on twitter user timelines) and driving additional traffic to the ICAN website. ICAN newsletters are widely distributed via the ICAN email lists and in ICAN partners networks, in addition to being available to view and download from the project website. Previous newsletters covered a wide range of articles about diverse coastal web atlas and other relevant geospatial resources, in addition to promoting and documenting events of interest to ICAN audiences and the wider network. The upcoming newsletter is in progress and currently collating articles for a special issue focused on the ICAN 9 workshop. **Conference participation**ICAN members participated in sharing work at several online conferences in 2021, including Coastal GeoTools 2021 (February), IMDIS 2021 (April), CoastGIS 2021 (September). |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 26 January 2022

# International Quality-controlled Ocean Database (IQuOD)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
| International Quality-controlled Ocean Database (IQuOD)       |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| The IODE-IQuOD project was established by IODE-XXIII (2015) through Recommendation IODE-XXIII.3      |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Submitted by the Co-Chair(s) of the Steering Group: Catia Domingues (Brazil/Australia/UK), Simon Good (UK) on 20/01/2022      |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The aim of the project is to produce, freely distribute and curate the highest quality, most complete and consistent global ocean subsurface temperature profile repository for Earth system, climate and ocean studies, with (intelligent) metadata and an uncertainty estimate for every observation. This aim will be achieved through coordination of resources and expertise into a single best practice international community effort. IQuOD maintains a collection in the Ocean Best Practices Repository (<https://repository.oceanbestpractices.org/handle/11329/1590>) and version 0.1 of the IQuOD dataset is available to users from through the DOI <https://doi.org/10.7289/v51r6nsf> and on the NCEI THREDDS server <https://www.ncei.noaa.gov/data/oceans/iquod/>. IQuOD v0.1 updates were performed 4 times in 2021: May 1, June 12, Nov 29, and one further set is in the queue for archiving. As face to face meetings have not been possible over the last two years, the IQuOD collaboration has been maintained through remote meetings. Despite the challenges brought by the COVID pandemic, the project published a paper on assignment of uncertainties to the ocean profile data in 2021, a paper on quality control using machine learning, and is almost ready to submit a paper on automatic quality control.      |

1. *Assumptions and risks*

|  |
| --- |
| IQuOD members contribute through support from their individual institutions. Each member might typically contribute 0.1FTE. However, this support is not guaranteed and has recently been under pressure due to factors such as the COVID pandemic which has put timescales for completing objectives at risk.      |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Papers published on assignment of intelligent metadata to profiles (in 2018), quality control using machine learning (2021), and assignment of uncertainty estimates (2021)O2. Version 0.1 IQuOD dataset available to users |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Number of users of the IQuOD data | Download statistics are not currently available2 papers cite the dataset (1 since 04/2021) as of 20/01/2022 according to Google Scholar |
| PI2. Number of papers published by the project and number of citations | 3 papers (2 since 04/2021)10 citations (6 since 04/2021) as of 20/01/2022 according to Google Scholar |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: Automatic quality control |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Finalisation, submission and publication of the automatic quality control benchmarking tests in an open access journal  | In progress |
| A1.2: Implement automatic quality control procedures identified in A1.1 at NCEI | In progress |
| A1.3: Apply the automatic quality control procedures to the historical profile database and release to users | In progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| A revised draft manuscript has been produced and circulated to co-authors for comments. Submission is expected within a month. |
| **Milestone/deliverable/work package** |
| M2: Assignment of uncertainties to profile data |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: Finalisation, submission and publication of a paper documenting uncertainty assignments in an open access journal | Completed |
| **Report on status of activities. Problems experienced and measures taken** |
| The paper has been published:Cowley R, Killick RE, Boyer T, Gouretski V, Reseghetti F, Kizu S, Palmer MD, Cheng L, Storto A, Le Menn M, Simoncelli S, Macdonald AM and Domingues CM (2021) International Quality-Controlled Ocean Database (IQuOD) v0.1: The Temperature Uncertainty Specification. *Front. Mar. Sci.* 8:689695. doi: 10.3389/fmars.2021.689695. |
| **Milestone/deliverable/work package** |
| M3: Expert quality control |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A3.1: Continued development of the IQuOD expert quality control tool | In progress |
| A3.2: Migration of the expert QC system to AWS infrastructure supported by IODE | In progress |
| A3.3: Publication of a paper on using machine learning to quality control oceanographic data | Completed |
| **Report on status of activities. Problems experienced and measures taken** |
| IODE has provided an AWS account on which to host the IQuOD expert quality control tool. The migration from the previous infrastructure was initiated in 2021 but it is impacted by the pandemic and behind schedule. The migration is expected to be concluded in Jan 2022, which will allow expanding the pool of users.The paper has been published:Castelao, G. P. (2021). A machine learning approach to quality control oceanographic data. *Computers & Geosciences*, 104803. doi: <https://doi.org/10.1016/j.cageo.2021.104803>. |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 21 Jan 2022

# Ocean Data Portal (ODP)

(no report received)

# IOC Ocean Best Practices System (OBPS)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
| IOC Ocean Best Practices System (OBPS) |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
|  IODE-XXV item 7.1.1 - Decision of the 30th Session of the IOC Assembly; (Decision IOC-XXX/7.2.1)    |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
|  Pauline Simpson 19 January 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| During 2021, the Ocean Best Practices System (OBPS) achieved expanded community recognition and has maintained the solid base that has been established. The system continues to mature with over 1500 methodologies in the repository and increased engagement with diverse marine observation, data management and application communities. OBPS supports increasing efficiency, reproducibility and interoperability for the entire ocean observing value chain by providing the community with a unified, sustained and readily accessible knowledge base of best practices from various marine disciplines. It is expanding to include diverse document types (such as videos and documents in non-English languages).It is governed by a 20 member Steering Group which meets online monthly each second Wednesday and the agenda is WP driven. The SG also has an Annual Meeting and in 2021 due to Covid, it was online, with sessions held all day 7-9 December 2021, from 09.00-17.00 CET. During that meeting the SG worked on and adopted new structures and governance, including decision making procedures. Despite the range of time zones the SG members' attendance was excellent and acknowledges that OBPS has an engaged and enthusiastic SG.  OBPS is working on broader engagement with the Ocean Community. We are being approached by ocean research and application professionals interested in working with us. One platform we have created in 2021 is a structure we call “Task Teams”. These short-term teams are expert groups who come from the community at large and are convened to consider a specific issue and develop recommendations for community consideration. Four Task Teams (4) have been implemented [[https://www.oceanbestpractices.org/about/task-teams](https://www.oceanbestpractices.org/about/task-teams)/]. The most recent one is looking at processes for adapting existing best practices for use in regions of limited infrastructure. In addition to the Task Teams, OBPS is creating a new Stakeholder Community Forum (SCF) to encourage interaction and participation from a broad range of experts. The SCF’s role is to provide an external review of OBPS and offer recommendations for OBPS evolution. SCF will also work with OBPS supporting user engagement starting in 2022 and will be a major communication channel for the OBPS and the OceanPractices Programme (see below)Guiding the growth and service to the ocean community are the OBPS Strategic and Implementation Plans, which were approved by IOC Programme sponsors in 2021. Almost all actions in the Implementation Plan for 2021 have been completed. We have been able to continue our work despite COVID restrictions but recognize that the related limitations have reduced our efficiency. In 2021, OBPS contributed presentations to 22 meetings as well as published 3 peer reviewed articles and an IOC Workshop Report 294, for the 2020 Workshop. The annual workshop September 2021 online Community Workshop continued with good participation and had 670 registrations. The first training video about OBPS has just been produced.We have been expanding our work with Early Career Ocean Professionals through two ECOP on the OBPS Steering Group, and volunteer ECOP have been supporting the newsletter and web activities.One of the challenges that OBPS has addressed, in collaboration with GOOS, is the creation of a process to endorse best practices by Expert Panels. A pilot demonstration with 3 endorsements was completed successfully. This is important from two aspects: endorsement identifies priorities for practices that are associated with EOVs; it also responds to community requests about how to select a practice from the multitude of practices that are available from the OBPS. OBPS Repository metadata and Search UI have been enhanced by external technology contracts in 2021 to enable this search filter (and other enhancements).OBPS received UN Ocean Decade endorsement for its ‘Ocean Practices for the Decade’ Programme (short title “OceanPractices”) and is putting structures in place within OBPS to run the programme. We anticipate that the programme will require additional resources and personnel. In October, we surveyed OceanPractices Partners and received strong continuing support particularly to actively engage in the creation and adoption of best practices as part of their programme activities. They also agreed to provide training materials for our capacity development efforts in which we are also guided by the Ocean Teacher Global Academy. |

1. *Assumptions and risks*

|  |
| --- |
| **Assumptions:** Continued foundational funding; additional resource mobilization, OceanPractices Decade Programme funding; community adoption and expert endorsement; an engaged and energetic Steering Group, desire for multi-organization federated network for best practices access.  **Risks**: Cessation of funding; non success in grant bids and Decade Programme funding; decrease of community engagement |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes:**  |
| **Strategic Objective 01:**To secure the OBPS as a trusted system through which the ocean  community persistently archives and converges their methods, standards, guides, and other methodological content into  context-sensitive best practices  |
| **Strategic Objective 02**:To accelerate the interoperability of observations, convergence of methodologies, and conventions across ocean communities into trusted, transparently-developed, context-sensitive and interoperable best practices and standards |
| **Strategic Objective 03:** To foster community-led and equitable capacity development in ocean best practices |
| **Strategic Objective 04:** To facilitate the creation of a federated network of interoperating ocean practices systems across all rights-holders and stakeholders |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Increase in number of records in OBPS Repository | **300 in 2021 (total 1500 Dec 2021)** |
| PI2. Number of Community workshop participants? | **670 registered in 2021** |
| PI3. Number of Training courses and training videos in OBPS | **23** |
| PI4. Number of Endorsed Practices in OBPS | **3** |
| **Status of Workplan Implementation 2021 & 2022** |
| **Milestone/deliverable/work package**  |
| **PROJECT MANAGEMENT** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| Steering Group Annual Meeting and report (2021) | **completed** |
| Steering Group Monthly Meetings and reports (2021) | **completed** |
| Resource Mobilization | **in progress** |
| Contribution to External Projects (EU funding: EuroSea, JERICOS3, CAPARDUS) | **in progress** |
| **Report on status of activities. Problems experienced and measures taken:** |
| Covid-19; move to total online meetings |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **OPERATIONS** |  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **S0-01.A1**:. Secure a CORE Trust Seal Repository Certification | **in progress** |
| **S0-01.A1**: Secure an ISO Repository Certification | **postponed** |
| **S0-01.A2**: Continue efficient fit-for-purpose operations of the OBPS repository including user-required technology enhancements | **in progress** (enhancements ongoing with WP3) |
| **Report on status of activities. Problems experienced and measures taken:** |
| see status column.  |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **ADVANCED TECHNOLOGIES AND INTEROPERABILITY** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **S0-01.A3**: Create improved content browsing and discovery functions through decision tree methods. (helping a user decide which options are available for selection of a best practice). (and implementing mobile app) | **in progress** - Task Team on Decision Trees being formed 2022.**postponed** - Mobile app  |
| **S0-02.A3**: Expand enhanced search including semantic capabilities to accommodate broader range of disciplines, languages and cultures | **completed** - The EDS contract provided a more user-driven way to update our semantic resources, which will reduce overhead on this task |
| **Report on status of activities. Problems experienced and measures taken** |
| see status columnProblem - limited In-house technology support; Challenge - grant funding is needed for technology enhancements |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **PUBLICATIONS, REVIEW AND ENDORSEMENT PROCESSES** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **SO-02.A1**: Provide guidance to communities on process for endorsing BP / develop rigorous OBPS criteria for endorsement acceptance | **completed** - for GOOS Endorsement pilot process; next steps are to have other expert/network groups engage in endorsement |
|
|
| **SO-02.A6**: Increase contributions to the Frontiers in Marine Science: Research Topic Best Practices in Ocean Observation | **in progress** |
| **Report on status of activities. Problems experienced and measures taken** |
| see status columnno problems |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **COMMUNICATION, OUTREACH AND COMMUNITY LIAISON** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **SO-02.A4**: Expanded communication plans to broaden engagement of ocean communities in creation and use of BP | **in progress**  |
| **SO-02.5**: Host annual workshops | **completed** 2021  |
| **Report on status of activities. Problems experienced and measures taken** |
| see status columnno problems |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **TRAINING AND CAPACITY DEVELOPMENT** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **SO-03.A1:** Expand the OBPS portfolio of courses available from the Repository on best practice development and submission | **completed** for 2021; **in progress** for 2022 |
| **SO-03.A2**: Support external training and capacity development activities about OBPS with 4 x training videos | **completed** - Module 1**in progress** - Modules 2-4 Course topics and lecturers identified looking to complete early 2022 |
| **SO-03.A3:** Engage formal and informal education institutions and sponsors to advance incorporation of best practices for ocean observing into education curricula | **in progress** -contacts required in the academic community are being initiated |
| **Report on status of activities. Problems experienced and measures taken** |
| see status columnMore staff to address SO-03.A3 |
| **Milestone/deliverable/work package and strategic objective (SO)** |
| **OCEAN PRACTICES FOR THE DECADE PROGRAMME** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| **SO-02:** Identification of WP8 (co-)lead/s and OceanPractices Programme Coordinator | **in progress** - being done in 2022 |
| **SO-02:** Survey of Ocean Practices Partners on continued commitment and contribution | **completed** - 70% response with all responding affirming continuing interest |
| **SO-02:** Identification of OceanPractices pilot projects through coordination with other programmes, projects and activities  | **in progress** |
| **Report on status of activities. Problems experienced and measures taken** |
| See status columnMore staff to address decade programme and funding  |

Signed by Project Leader.     **Pauline Simpson**

Date. **19 January 2022**

*For IODE use only.*

Date received: 25 Jan 2022

# aQUADocs

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
| AquaDocs |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| IODE-XXVI. 2021. Decision IODE-XXVI.8.2: ESTABLISHMENT OF THE AQUADOCS PROJECT |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Sally Taylor and Ekaterina Kulakova, Project co-Managers, January 19, 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| AquaDocs is the new joint open access repository of the [UNESCO/IOC InternationaI Oceanographic Data and Information Exchange (IODE)](https://iode.org/) and the [International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC)](https://iamslic.wildapricot.org/) with support from the [FAO Aquatic Sciences and Fisheries Abstracts (ASFA)](http://www.fao.org/fishery/asfa/en). AquaDocs has more than 38,000 publications covering the natural marine, coastal, estuarine/brackish and freshwater environments, and was created by merging content from two repositories (OceanDocs and AquaDocs). It serves as a repository for more than 130 organizations and projects to make aquatic and marine science information Findable, Accessible, Interoperable, Reusable (FAIR).AquaDocs officially launched on August 17, 2021 after two years of planning and development that included the following activities.* Joint Repository Working Group (JRWG), with membership from the OceanDocs Steering Group, and Aquatic Commons Board, worked through decisions about branding, repository structure, document types, metadata, harvesting, discoverability, and usage statistics.
* RFP sub-group evaluated vendor proposals. JRWG recommended Atmire’s hosted software solution Open Repository with funding from IODE and ASFA, and in kind contributions from IAMSLIC.
* JRWG members Pauline Simpson, Sally Taylor and Arno Lambert worked with Atmire on the development of the new repository, including the customization of the interface, repository structure, and record displays, metadata mapping and migration of records from OceanDocs and Aquatic Commons, and drafting of policies and user guides.

Since the launch, project co-managers Ekaterina Kulakova and Sally Taylor, with significant support from Pauline Simpson, have been working on the following activities.* Facilitating contributions from existing organizations, and onboarding new organizations
* Working with Atmire to modify record displays and trouble-shoot technical issues
* De-duplication of records as a result of the merger of two repositories
* Promotion of AquaDocs by presenting at the IAMSLIC conference (Oct 2021), ASFA Advisory Board (Sept 2021), and submission for the upcoming International Ocean Data Conference (Feb 2022)
* Developing ASFA Trust Fund proposal to collaborate on record submission and training
 |

1. *Assumptions and risks*

|  |
| --- |
| * Ongoing funding from IODE with additional financial contribution from ASFA
* Ongoing support from IAMSLIC for repository operations, training and promotion
 |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Make aquatic and marine science information FAIR (Findable, Accessible, Interoperable, Re-usable) for all |
| O2. Make grey literature more easily and equitably available |
| O3. Offer a repository platform to organizations and individuals without the infrastructure to support their own |
| O4. Offer repository training and support |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Increase in Number of records available on Open access to all | 380 records added since June 25, 2021 (after Aquatic Commons migration).38250 total records (as of January 18, 2022). |
| PI2. Increase in AquaDocs Communities | 4 new communities added* POGO: Partnership for Observation of the Global Ocean
* SCOR: Scientific Committee on Oceanic Research
* European Union
* Krasnoyarsk Branch of Russian Research Institute of Fisheries and Oceanography (“NIIERV”)
* 83 communities added from Aquatic Commons to existing communities in OceanDocs
 |
| PI3. Training and support offered | * 2 training sessions (see below)
* 25 depositors supported via email
 |
| **Status of Workplan Implementation** |
| **WP1: Project Management and Coordination** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: AquaDocs proposal submitted to IODE XXVI (April 2021) | completed - successful |
| A1.2: ASFA Trust Fund proposal submitted (Aug 2021) | completed - successful |
| A1.3: Steering Group Selection (in 2022) | in progress |
| A1.4: Organize first SG-AquaDocs (in 2022) | in progress |
| A1.5: Agree 2022-2023 Work Plan (in 2022) | in progress  |
| A1.6: Ocean Decade Project Proposal submission (in 2022) | in progress |
| A1.7: Manage the Atmire Contract | in progress (open ended) |
| **Report on status of activities. Problems experienced and measures taken:** |
| **WP2: Technology Development** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| Prior to this reporting period (Jan - March 2021)* Finalize static pages (About, Policies), deposit agreement, workflows and permissions
* Migrate OceanDocs records to AquaDocs
 | completed |
| A2.1: Soft launch of AquaDocs with OceanDocs records only (April 2021) | completed |
| A2.2: Migration of Aquatic Commons records to AquaDocs and implementation of URL resolver (August 2021) | completed |
| A2.3: Implement Analytics | completed |
| A2.4: Complete duplicate record deletion using Metadata Quality Module and batch editing (in 2022) | in progress |
| A2.5: Enhance user experience of interface, including improvement to simple item and results display | in progress (open ended) |
| **Report on status of activities. Problems experienced and measures taken:** |
| **WP3: Content Sourcing and Curation** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A3.1: Editorial Review Team Curation | in progress (open ended) |
| A3.2: Onboard new communities | in progress (open ended) |
| **Report on status of activities. Problems experienced and measures taken:** |
|  **WP4: Training and Capacity Development** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A4.1: User guides for Depositors, Editors, Collections Administrators, and Searching | completed |
| A4.2: Training sessions* Ms Svetlana Egulemova, new staff member at Murmansk Technical University, Russia (October 26, 2021). Outcome: 187 records in total.
* Ms Kseniya Polyaeva (Krasnoyarsk Branch of Russian Research Institute of Fisheries and Oceanography, Krasnoyarsk, Russia, December 27, 2021). Outcome: Institute collections’ structure within the AD repo created, digitization and metadata preparation process started.
 | completed |
| **Report on status of activities. Problems experienced and measures taken:** |
| **WP5: Communication, Users Marketing, and Feedback** |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| Prior to this reporting period (Jan - March 2021)* AquaDocs support email established
 | completed |
| A5.1: Press Releases for Launch 17 Aug 2021 | completed |
| A5.2: ASFA Advisory Board (Sept 2021) presentation | completed |
| A5.3: AquaDocs article in ASFA Magazine (Issue 6, 2021) | completed |
| A5.4: IAMSLIC conference (Oct 2021) presentation | completed |
| A5.5: Regional presentations (a selection)* Researchers at INSTM - Institut National des Sciences et Technologies de la Mer, Tunisia (June 18, 2021)
* Participants of the Round Table “Ways to Coordinate the Activities of Libraries within the Marine Research Institutions of Russia” (Institute of Biology of the Southern Seas, Russia, September 17, 2021, held online)
* Faculty staff and students at Murmansk Technical University, Russia (face-to-face meeting, November 22, 2021). Outcome: new registrations.
 |  |
| A5.6: International Ocean Data Conference (Feb 2022) presentation | in progress |
| A5.7: OpenDOAR registration | completed - see <https://v2.sherpa.ac.uk/id/repository/10345> |

Signed by Project Leader.     

Date.      January 19, 2022

*For IODE use only.*

Date received: 20 Jan 2022

# IODE-OceanExpert

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
| IODE-OceanExpert |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| The 23rd Session of the IODE Committee (2015) established OceanExpert as a Project through Recommendation IODE-XIII.2 |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Project manager Sofie de Baenst and Technical Manager Arno Lambert – 17 January 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| During the first Steering Group meeting of the project (November 2021) it was decided that the project will mainly focus on IOC activities and serve all IOC programs for events, meetings, documents, and participants list.The Steering Group decided to investigate the possibility for linkage to other online data and information systems.Continued clean-up of the directory by Sofie de Baenst, John Ngatia and Carlos Andrade: expert profiles, institutes, duplicates, mail failures.Technical contribution: the different IOC websites can no longer ingest data in OceanExpert via the PaperClip plugin, they can still show all the information that is stored in OceanExpert using that same plugin. For tasks that will change the content of the OceanExpert database, users are redirected to the OceanExpert interface.Bug Fixing and improvements are continued: see GitHub repository.The OceanExpert directory is successfully implemented in the ODIS Architecture (Ocean Infohub Project). |

1. *Assumptions and risks*

|  |
| --- |
| OceanExpert is missing some functionalities that Paperclip has. We need to see what is required for all different IOC programs and make sure they keep using OE and understand the added value.Some bug fixing problems are not easy to solve and ask more time then initially foreseen.  |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. To become the focal database for IOC events (documents, participants) |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Look into the possible linkage to other online data and information systems | ORCID could be an option – needs further investigation (expert details) and the Alumni system for the OTGA program. Will start in 2022 |
| PI2. Check current GDPR and UN regulations on storing personal data | To be checked on the level of IOC secretariat and UNESCO  |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: During the first Steering Group meeting (Nov 2021) it was decided to create a workplan and volunteers to assist. This will be handled in the first months of 2022 |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1:- |  |
| A1.2:- |  |
| A1.3:- |  |
| **Report on status of activities. Problems experienced and measures taken:** |
| **Milestone/deliverable/work package** |
| M1:- |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1:- |  |
| A2.2:- |  |
| A2.3:- |  |
| **Report on status of activities. Problems experienced and measures taken** |

Signed by Project Leader. Sofie de Baenst

Date. 17 January 2022

*For IODE use only.*

# IODE Quality Management Framework

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

*1. Title of project/activity and acronym*

|  |
| --- |
| IODE Quality Management Framework  |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| Recommendation IODE-XXII.18 |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Greg Reed |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The main objectives of this project are to (i) provide the overall strategy, advice and guidance to NODCs to establish organizational quality management systems for the delivery of oceanographic and related data, products and services, (ii) initiate and review existing standards and Manuals and Guides with respect to the inclusion of quality management procedures and practices, and (iii) apply the necessary capacity development activities to ensure accreditation of NODCs according to agreed criteria in order to bring all NODCs to a minimum agreed level. |

1. *Assumptions and risks*

|  |
| --- |
| Slow uptake of the Quality Management Framework from the IODE community. No new applications for accreditation received. |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. prepare and maintain the IODE Quality Management Framework GuidelinesO2. receive applications and review the accreditation of NODCs and ADUs |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. IODE QMF guidelines maintained | Guidelines maintained and up to date |
| PI2. Applications for accreditation reviewed | No applications received |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package****Deliverable 1.**  |
| M1: Provide necessary capacity development activities to ensure accreditation of NODCs according to agreed criteria in order to bring all NODCs to a minimum agreed level  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Training course planned for 2nd half 2022 | Planned |
| A1.2:  |  |
| A1.3:  |  |
| **Report on status of activities. Problems experienced and measures taken:** |
| No applications for accreditation or re-accreditation received in the last twelve months |
| **Milestone/deliverable/work package** |
| M1: |
| **Activities** | **Status (completed, in progress, , cancelled)** |
| A2.1: |  |
| A2.2:  |  |
| A2.3:  |  |
| **Report on status of activities. Problems experienced and measures taken** |

Signed by Project Leader. Greg Reed

Date. 25.01.2022

*For IODE use only.*

Date received: 25 Jan 2022

#  ODIS Catalogue of Sources (ODISCat)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

* + - 1. *Title of project/activity and acronym*

|  |
| --- |
| ODIS Catalogue of Sources ODISCat |

* + - 1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| IOC/IODE-XXV/5.2.1 |

* + - 1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Arno Lambert 14/01/2022 |

* + - 1. *General overview of the project status/ Executive summary*

|  |
| --- |
| During the summer months of 2021 a student has made some improvements to the ODISCat database and interface under the supervision of Mr. Arno Lambert.* EOV: the possibility of adding an EOV to a link between sources
* Link to OE: till now we only had a link to the submitter/owner of a record. This was extended to the institutions of OceanExpert
* Obtaining From and Contributing To fields: links are only possible between entries in ODISCat, this to avoid unable links to projects and datasets of which we don’t have any information
* Fields were added to make a link to ODIS-Arch/OIH to point to a start point and ODIS-Arch technology used, this will enable the automatic ingestion/discovery of ODISArch JSON-LD data.

Mr. Cristian Muñoz has been working as a consultant for 2 persiods in 2021* New entries: steep growth of the number of entries but that also means there are a lot of records that still need some editing to be relevant. There are now about 3000 entries in the database (from around 900 by the end of 2020).
* Dashboard showing what countries are owning most of the records/resources in the database.
* QC: 71% should be finished but still a lot to do to improve/complete the quality of the records.
* Graph db: Mr. Cristian Muñoz also made an export from the current db to a graph db which gives us the possibilities to show the relations between the different records in the database.
* API: Mr. Cristian Muñoz created an API to the database

A SG has been established and a first meeting of that steering group has been organized on 06/12/2021 (https://oceanexpert.org/event/3281). Due to the COVID restrictions this meeting was held fully online. |

* + - 1. *Assumptions and risks*

|  |
| --- |
| * Dashboard created by Mr. Cristian Muñoz is showing what countries are owning most of the records/resources in the database.
	+ none/very few entries owned by African counties
	+ Asian countries seem to be underrepresented
* Imbalance between the different categories in the database. About half of the records belong to 3 categories (Data systems/portal, Data products and Data catalogues). An effort is needed to cure that.
* Imbalance is also to be seen with the themes, where half of the records is about Physical, Biological or Chemical oceanography (DS03, DS01 and DS02).
* Gaps:
	+ Scope of the categories must be (better) defined.
	+ List of categories must be redefined.
	+ Standardize list of metadata standards and M2M tech.
	+ Africa and Asia are underrepresented.
	+ Add ECV, EBV and EGV.
 |

* + - 1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. No clear workplan has been defined yet as there are a lot of questions about budgeting and integration in ODIS/OIH. Workplan should be defined in one of the next SG meetings. |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. |  |
| PI2. |  |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: |  |
| A1.2: |  |
| A1.3: |  |
| **Report on status of activities. Problems experienced and measures taken:** |
|  |
| **Milestone/deliverable/work package** |
| M1: |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: |  |
| A2.2: |  |
| A2.3: |  |
| **Report on status of activities. Problems experienced and measures taken** |

Signed by Project Leader. Arno Lambert

Date.

*For IODE use only.*

Date received: 15 Jan 2022

# OceanTeacher Global Academy (OTGA)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

*Title of project/activity and acronym*

|  |
| --- |
| OceanTeacher Global Academy-2 |

*Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| The OceanTeacher Global Academy project was formally established by IODE-XXIII (2015) through Decision IODE-XXIII.4 |

*Annual report submitted by [name] on [date]*

|  |
| --- |
| Greg Reed, Claudia Delgado, January 2022 |

*General overview of the project status/ Executive summary*

|  |
| --- |
| During 2021, OTGA successfully organised 32 online courses, of which 6 were later adapted to self-paced mode. OTGA has also hosted 4 other courses with external partners. 1550 learners enrolled in courses for 2021. Training courses were delivered by the network of 16 Regional and Specialized Training Centres and languages of instruction were English, Spanish and Portuguese. The second session of the Steering Group for the OceanTeacher Global Academy took place online between 16-19 November 2021. The Steering Group accepted the application to host an OTGA Specialized Training Centre from the IOC Science and Communication Centre on Harmful Algae at University of Copenhagen, which has already been delivering HAB Identification and Certification training using the OTGA eLearning Platform. This brings the total number of OTGA Regional and Specialized Centres to seventeen. The OTGA work plan for 2022 is being finalized with some 70 courses proposed across the OTGA network. The course priorities are being discussed with IOC programmes and regions to discuss priorities and identify common/recurrent topics to prioritize the courses to be organised. The Steering Group re-elected Udaya Bhaskar (RTC-India) as SG Chair for the next intersessional period. |

*Assumptions and risks*

|  |
| --- |
| All 2021 courses delivered online. Ongoing pandemic restrictions on travel will limit to ability to deliver face to face courses. Assumption is most training courses in 2022 will be online. |

***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1.Increased capacity and skills by ocean specialists to use standards and best practices tools to achieve SDG 14 |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Percentage of learners applying and implementing standards and best practices | Results of 2021 OTGA Follow-up Survey: 88% agree or strongly agree |
| PI2. Percentage of learners influencing decision making processes | Results of 2021 OTGA Follow-up Survey: 80% agree or strongly agree (influencing decision processes in my organization) |
| PI3. Percentage of learners advocating use of best practices defining joint initiative | Results of 2021 OTGA Follow-up Survey: 80% agree or strongly agree |
| O2.Regional and Specialized Training Centres efficiently develop and manage the training programme. |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| P1. Percentage of Training Centres efficiently managed the training programme | 5 training centres were not able to deliver training in 2021 mainly due to Covid restrictions and cancellation of courses. |
| P2. Number of Member States supporting OTGA Training Centres by (i) percentage of trainees funded by their Member States or host institutes, (ii) number of secondments to OTGA network, (iii) direct funding | (i) all courses online, no trainees funded(ii) no secondments due to Covid(iii) in kind support from MS to support training centres |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: Empower learners to apply the skills learned and influencing the implementation and the use of standards and best practices widely accepted |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Organize and host training courses relevant to the Regions (online, blended and face to face) | 36 courses delivered using the OTGA e-learning platform. All courses delivered online due to Covid pandemic. Courses delivered for IOCARIBE (9), IOCAfrica (1), Westpac (3), IOCINDIO (1) regions |
| A1.2: Provide travel grants to facilitate learner attendance at training courses | No travel grants provided. |
| **Report on status of activities. Problems experienced and measures taken:** |
| All courses delivered online which resulted in increased number of learners attending OTGA courses. Some training centres unable to deliver courses or delayed courses due to Covid restrictions. |
| **Milestone/deliverable/work package** |
| M2: Produce of new knowledge and training resources |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: Design and develop new course content to address the capacity needs of IOC Programmes | New self-paced courses developed for online learning |
| A2.2: Liaise with content providers on course design and presentation | E-learning instructional designer contracted to evaluate online courses and facilitate stakeholder meetings for the effective implementation of LMS. |
| A2.3: Upload training resources on the OTGA e-Learning Platform | All 2021 course material uploaded to e-learning platform |
| **Report on status of activities. Problems experienced and measures taken** |
| Online courses evaluated using the QM Continuing and Professional Education Rubric to improve the overall design of courses. Learning objectives and competencies to be included in all courses |

Signed by Project Leader. Greg Reed/Claudia Delgado

Date. 6 January 2022

*For IODE use only.*

Date received: 6 Jan 2022

# Ocean InfoHub Project (OIH)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

* + - 1. *Title of project/activity and acronym*

|  |
| --- |
| Ocean InfoHub Project (OIH) |

* + - 1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| I’m not sure which IODE Session (IODE XXV perhaps?) |

* + - 1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Lucy Scott and Harrison Ong’Anda |

* + - 1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The Ocean InfoHub Project is a three-year project that will support the initial development of the Ocean Data and Information System (ODIS) architecture, as well as develop communities of practice (information systems and their end users) in three pilot regions; Africa, the Latin America and Caribbean region and the Pacific Island Developing states.The Ocean Data and Information System (ODIS) will provide an interoperability layer and supporting technology to allow existing and emerging ocean data and information systems, from any stakeholder, to interoperate with one another. This will enable and accelerate more effective development and dissemination of digital technology and sharing of ocean data, information, and knowledge. As such, ODIS will not be a new portal or centralised system, but will provide a collaborative solution to interlink distributed systems for common goals. Together with global project partners and partners in the three regions, a process of co-design will enable a number of global and regional nodes to test the proof of concept for the ODIS. The Ocean InfoHub Project will therefore provide an opportunity for partners and users to contribute to, and access the UN Ocean Decade global data ecosystem while also offering capacity development opportunities to all to participate equitably in the UN decade data ecosystem. |

* + - 1. *Assumptions and risks*

|  |
| --- |
| It is assumed that the enhanced and centralized availability of ocean data and information content will contribute to the development of ocean products. There are risks that decision makers will be unaware of the system or not prepared to use it as a trusted source. These risks will be managed through a combination of project Steering Group, communications and outreach, and training and capacity development to ensure the relevance, community awareness and usability of the Ocean InfoHub. There is a risk that certain data and information (of commercial and/or military importance) may be restricted. This risk will be mitigated by respecting mandatory organizational controls. This would include promoting the sharing information on the existence of data and instructions for requesting access when direct access is not available. This would also include promoting the sharing of data at levels allowed without contravening operational policies (e.g. providing aggregated data, removal of personally identifying information and other standard practices).It is assumed that national/regional/international data/information systems are willing to develop the integrated interoperability products/services. There is a risk that invited data systems may not be willing to collaborate. In cases where the system is part of a higher-level network, this risk will be mitigated to the extent possible through collaboration at the network level, thus seeking opportunities to limit the incremental effort required on the part of the contributing systems. This risk will also be managed through the development of the specifications for interoperability services, etc. by seeking input from the community in order to create specifications deemed relevant and useful. |

* + - 1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. *Number of partners who are contributing and sharing continuously content to the Ocean InfoHub* |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. *Number of content items shared through the system (target 1000)* | Over 130,000 resource elements shared from 7 linked information systems. |
| PI2. *Number of Ocean InfoHub users which have reported**collaborative initiatives stimulated by their use of the system (target 10)* | Reports have not yet been requested of partners |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: WP1 Project Management and Coordination |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Project manager monthly and annual reports | **Completed to date** |
| A1.2: Steering Group meetings | **Completed to date** |
| A1.3:External evaluation |  |
| A1.4:Project wrap up meeting |
| **Report on status of activities. Problems experienced and measures taken:** |
| All activities are on track |
| **Milestone/deliverable/work package** |
| M1: WP2 Technology development |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| 2.1 Global Hub Development | In progress |
| 2.2 Further development of ODISCat | In progress |
| 2.3 ODIS development | In progress |
| 2.4 ODIS technical meetings | In progress |
| 2.5 EurOcean service integration | In progress |
| 2.6 MarineTraining.eu service integration | Completed |
| **Report on status of activities. Problems experienced and measures taken:** |
| **Milestone/deliverable/work package** |
| M1: WP3: Establishment and initial support of the nodes |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| 3.1 Global node establishment and operation | In progress |
| 3.2 LAC (IOCARIBE+) node | In progress |
| 3.3 IOCAFRICA node | In progress |
| 3.4 Pacific SIDS node | In progress |
| 3.5 Thematic nodes establishment and operation | In progress |
| 3.6 Match-making service development and operation, assisting end users with CD queries | In progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| **Milestone/deliverable/work package** |
| M1: WP4 Training and capacity development of the nodes |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| 4.1 development of online training modules (6 modules) | Completed |
| 4.2 in-class training courses | Postponed |
| 4.3 online hosting of training materials | In progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| **Milestone/deliverable/work package** |
| M1: WP5: Communication, users marketing and feedback: |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| 5.1 participation in meeting and workshops (D5.2) | In progress |
| 5.2 community surveys (by global hub and regional nodes) | In progress |
| 5.3 communication services including social media, web site | In progress |
| 5.4 publications and reports | In progress |
| **Report on status of activities. Problems experienced and measures taken** |

Signed by Project Leader. Lucy Scott

Date.

*For IODE use only.*

Date received: 17 Jan 2022

# Pacific Islands Marine Bioinvasions Alert Network (PacMAN)

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

*Title of project/activity and acronym*

|  |
| --- |
|  Pacific Islands Marine Bioinvasions Alert Network (PacMAN) |

*Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
|       |

*Annual report submitted by [name] on [date]*

|  |
| --- |
| Ward Appeltans 31.1.2022 |

*General overview of the project status/ Executive summary*

|  |
| --- |
| During 2021 the PacMAN project has made extensive preparations and plans for the practical deployment of invasive species monitoring. The coordination team in Fiji has met with major local stakeholders individually throughout the year, and in addition a needs assessment questionnaire was circulated, and an initial national stakeholder meeting was held in June 2021. The main national and regional stakeholders have accepted the project, and have been active in discussions, in providing additional services and in providing advice on the main local needs for the project results. The activity of the local community shows that there is strong interest and need in the project deliverables locally. The PacMAN monitoring plan was developed containing aspects of all work done during the year, a target species list for qPCR monitoring, sampling design and field sampling protocols as well as the data management plan. The monitoring plan was discussed and accepted during the advisory board meeting in September 2021 with the scientific advisory board members and the major stakeholders in Fiji. A first running version of the bioinformatic pipeline has been developed and shared in GitHub. The first settlement plates were deployed in November 2021 in four different sites in the Suva harbour. The deployment was accompanied with a launch event with media coverage in Fiji and with the participation of major stakeholders, including the Permanent Secretary for the Ministry of Environment and Waterways Mr. Joshua Wycliffe. A (virtual) note of appreciation was also given by the Executive Secretary of the Intergovernmental Oceanographic Commission (IOC) of UNESCO and Assistant Director-General of UNESCO Dr. Vladimir Ryabinin. Initial water and plankton samples were taken in connection with the deployment of the plates, as well as environmental measurements from the surface layer. The year 2022 is planned as a trial year, where the project protocols will be finetuned based on experiences in the field.  |

*Assumptions and risks*

|  |
| --- |
| After the development of the system and Member States have received customized training, they will be able to deliver the outcomes of the project independently.  |

***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. An early warning and detection system of marine invasive species for Pacific Islands  |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI In-situ monitoring and Early warning system in place  | In progress |
| PI1.1. A national marine invasive species monitoring plan supported by all stakeholders  | Completed |
| PI 1 2. Number of scientists trained to use the monitoring protocol | In preparation |
| PI 1.3. Number of monitoring surveys conducted  | In progress, fieldwork of the first survey done |
| PI 2.1. Number of marine invasive species risk- assessed and priority-listed for in-situ observations  | In progress, literature review done, 10 high-risk species chosen based on other national risk-assessments. |
| PI 3.1. Number of scientists and stakeholders using the early warning and detection system of marine invasive species for Pacific Islands  | Not yet relevant |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| Output 1: Increased capacity of Member States to use international standards and best practices to detect marine invasive species with novel technologies |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Coordination and advisory board meetings | In progress, coordination team meetings held monthly, advisory board meetings yearly |
| A1.2: Development of monitoring plan  | Completed |
| A1.3: Scientific training  | In progress |
| A1.4: Field and Lab work | In progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| The PacMAN monitoring plan was finalised and accepted by all local stakeholders and the scientific advisory board. This includes the detailed protocols for sampling and sample handling, guiding the local scientists in the trial phase of the sampling for invasive species monitoring. Because of the covid-19 pandemic in Fiji in spring 2021, the University of the South Pacific closed, and everyone was working from home. It was not possible to organize large in-person meetings, and stakeholder communication was more challenging. Instead, the coordination team in Fiji organized small virtual meetings with key stakeholders, where the needs of the local community were discussed. Possibilities for collaboration with qPCR analysis were identified, and the support of the local ministries involved in environmental management was confirmed. Fieldwork was delayed by one month due to issues in procurement of materials as well as a need to ensure the requirements of environmental impact assessments in Fiji raised by the local stakeholders. However, these delays are expected in the initial phases of the project and are the reason why the first year is considered a trial phase, where the protocols and field conditions are fine-tuned.  |
| **Milestone/deliverable/work package** |
| **Output N°2:** Increased technical and scientific capacity of Member States in marine invasive species early warning  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: Development of infrastructure, bioinformatics pipeline and reference database  | In progress. The first version of the bioinformatic pipeline is done, and the sample registration platform is in development |
| A2.2: Development and evaluation of habitat suitability models based on OBIS occurrences of potentially invasive species.  | In preparation |
| A2.3: Development of risk assessment algorithms to inform policy of species that are likely to establish themselves and become invasive in a particular location.  | In preparation |
| A2.4: Development of a dashboard application and alerting system to display and disseminate information produced by the risk assessment component.  | In preparation |
| **Report on status of activities. Problems experienced and measures taken** |
| In connection with the PacMAN monitoring plan, the sample registration datasheets were developed, with all required information for the full analysis and sharing of biodiversity data gathered for the PacMAN project. The sample registration platform where these datasheets will be submitted has also been conceptualized and its development initiated. The first version of the bioinformatics pipeline has also been developed and is available at <https://github.com/iobis/PacMAN-pipeline>.  |
| **Milestone/deliverable/work package** |
| **Output N°3:** Increased capacity to use the information from the marine invasive species early warning system to implement national and international policies  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: Stakeholder forum, communication and outreach  | In progress |
| A2.2: Training for scientists/users/stakeholders  | In preparation |
| **Report on status of activities. Problems experienced and measures taken** |
| Communication with the stakeholders has been active throughout the year. Despite difficulties due to the covid, the stakeholders gave feedback on the proposed monitoring plan and its development. The initial stakeholder forum was held together with the international scientific advisory board. During this meeting, the monitoring plan was reviewed, and any concerns were raised together with the scientific advisory board. Project outreach has been ensured by organising events, like the signing of the cooperation agreement with the Biosecurity Authority of Fiji (BAF) a launch event along with the first settlement plate deployments with the participation of all major key stakeholders. |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 1 Feb 2022

# ODINBLACKSEA

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|  Oceanographic Data and Information Network of Black Sea (ODINBLACKSEA) |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| The XIXth Session of the IODE Committee (Trieste, Italy, March 2007) through the Recommendation IODE-XIX.10 |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Mr. Oleksandr Neprokin |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| 1. Steering Committee (SC) online Meeting IX was conducted 14 July 2021. Only 2 participant countries representatives took part on the meeting, also Head of IODE Project Office Mr. Peter Pissierssens and invited participant Dr Stefania Klayn from the Institute of Biodiversity and Ecosystem Research of the Bulgarian Academy of Sciences.Dr. Lumiita Buga provided a presentation on SeaDataNet and EMODnet Chemistry. She emphasized that there are over 200,000 records in SEADATANET from Black Sea region now. Coverage is quite good except for Azov Sea which is not fully covered. In terms of parameters it is most temperature, salinity and chemical parameters.Mr Oleksandr Neprokin have made the review of the progress within the EMODnet biology.EMODnet-biology uses OBIS of IODE as the data sharing platform. Data collection for EMODnet biology mean that all the data sets to be uploaded to EuroOBIS (VLIZ) Integrated Publishing toolkit (IPT) or to regional/thematic OBIS nodes IPTs. For the Black Sea regional EMODnet bio data collection both EurOBIS and OBIS Black Sea nodes are eligible.Dr. Stefania Klayn have made the small presentation of her Institute of Biodiversity and Ecosystem Research of the Bulgarian Academy of Sciences. Then she shared her experience becoming the data provider for the OBIS. Dr Klayn wanted to contribute her PhD data to OBIS (coastal macrozoobenthic communities, mainly in soft bottoms). She had no previous experience of the publishing her data for OBIS and she had followed all the steps by herself using only the guides and online manuals. Her efforts were highly evaluated by the OBIS project manager Ward Appeltans.Mr Neprokin provided a brief demonstration on how to enter recods in ODISCat. He noted that user can login with his OceanExpert credentials. He briefly showed the search options. He then proceeded to the new record function and demonstrated the process to adding a new record. Mr Pissierssens explained that ODISCat is a precursor to ODIS.2. Steering Committee (SC) online Meeting X was conducted 16 December 2021. The representatives of all the participating countries have taken part in the meeting except Georgia. Mr. Oleksandr Neprokin have made the brief presentation of the new H2020-BG-2018-2020 (Blue Growth) Project “Advancing Black Sea Research and Innovation to Co-Develop Blue Growth within Resilient Ecosystems (BRIDGE-BS)”. Then he made introduction of the Water Quality database (WQDB) developed by the Ukrainian NODC (UkrSCES) and open for free access in November 2021 (<http://blackseadb.org/>). The further database development is planned within BRIDGE-BS Project. Important direction of the future work is expand export automation ability of WQDB to make it compatible with SEADATANET, EMODNET, OBIS, OIH, ODIS, etc.Dr. Lumiita Buga presented the results of Romanian NODC (NIMRD) - Black Sea Regional Leader for EMODNET Chemistry. She introduced Eutrophication & Acidity and Contaminants Data Products prepared during the 4th Phase of EMODNET Chemistry and performed the introduction of the new EMODNET Chemistry portal’s features and abilities.Mr. Asen Stefanov made the presentation of Bulgarian NODC (IO-BAS) contribution to different EU activities like SEADATACLOUD, COPERNICUS (Black Sea – Monitoring and Forecasting Centre (BS MFC), CMEMS InSitu TAC), EMODNET-Chemistry, EMODNET-Bathymetry and EMODNET-Ingestion.Dr. Nikolay Mikhailov from All-Russian Research Institute for Hydrometeorological Information – World Data Center, Obnininsk have presented the Contribution of Russian NODCs to the Black Sea Data Management in the framework of the IODE and EC projects. Also he presented RNODC product Ocean Data Portal BS (<http://www.oceandataportal.net/portal/portal/odp2/data>). The Ocean Data Portal will not create a new data system. The key principles of the Portal will be interoperability with existing systems and resources. He also introduced ODIS and RNODC contribution to this system and the draft plan of the activities of ODIS Partnership Centre on the basis of RNODC. He then presented the input of RNODC to the EU projects SEADATACLOUD and EMODNET-Chemistry.Navigation, Hydrography and Oceanography Services of Turkey appointed the new representative, Mr. EMRE TÜKENMEZ who make the short introduction to the activities of Turkish NODC. |

1. *Assumptions and risks*

|  |
| --- |
| IODE-XXVI had allocated US$ 10,000 for a meeting of the SG-ODINBlackSea but it was not possible to meet in-person in 2021 due to Covid-19. It is also possible the next IODE SG meeting for ODIN-BS to be conducted online due the pandemic continue in 2022.  |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Two Steering Committee (SC) Meeting was conducted online in 2021.O2. OBIS have been expanded by another data provider.  |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. |  |
| PI2. |  |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package****Deliverable 1.** ODINBLACKSEA 9th Steering Group Meeting Report.**Delverable 2.** New/updatedODIS cat instances (ODIS id: 1344, 2175, 3243) |
| M1: |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Capacity Building Activities will be held | In progress |
| A1.2: The inventory of online services of the Member States will be created in ODISCat. | In progress |
| A1.3: Assistance in the development, operation and strengthening of National Oceanographic Data (and Information) Centres and Associate Data Units (ADU) of the Black Sea Countries will be provided. | In progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| A1.1. IODE-XXVI had allocated US$ 10,000 for a meeting of the SG-ODINBlackSea but it was not possible to meet in-person in 2021 due to Covid-19. But 2 SG meetings were conducted online. A1.2. ODIS catalogue have been updated with new records. The work is ongoing. A1.3. The Institute of Biodiversity and Ecosystem Research of the Bulgarian Academy of Science (IBER - BAS) represented by Dr. Stefania Klayn have published their data via OBIS Black Sea node IPT instance (<http://gp.sea.gov.ua:8082/ipt/>). During the 9th SG meeting Mr. Neprokin recommended for IBER-BAS to become ADU. Mr. Pissierssens requested Dr.Klayn to contacted Mr Ward Appeltans, OBIS project manager to discuss this further.During the 10th SG meeting the participants presented their annual results within the regional activities related to the ODIN BLACK SEA. All presentations are available on the vent’s page of the [IODE web-site](https://www.iode.org/index.php?option=com_oe&task=viewEventDocs&eventID=3340).Ukrainian NODC (UkrSCES) have opened the access to their data base: <http://blackseadb.org/>. |
| **Milestone/deliverable/work package** |
| M1: |
| **Activities** | **Status (completed, in progress, , cancelled)** |
| A2.1: Collaboration opportunities with the Black Sea Commission will be increased. | postponed |
| A2.2: The inventory of Real Time Ocean Observation Stations will be updated | In progress |
| A2.3: Communication plan development | postponed |
| **Report on status of activities. Problems experienced and measures taken** |
| Mentioned above activities were postponed for different reasons. For the instance A2.1 is not to be implemented now cause the work of Permanent Secretariate of the Black Sea Commission is blocked due to the geopolitical issue. Another reason for postponing of activities is the pandemic and isolation which affects different aspects of collaboration among the participants and even demotivating sometime. On the one hand the online meetings is much easier to organize and it was done during 2021 and have shown the increase. But on the other hand, online meetings were performed too often taking to account that all the participants having the few international activities. It is leads to fatigue and low attendance which was shown on the example of the 9th session of the IODE SG-meeting for ODIN-BS, 16 July 2021. Another disadvantage of the majority of online meetings are strict time and content limitations, the lack of face-to face communications, etc.  |

Signed by Project Leader. Oleksandr Neprokin

Date. 18.01.2022

*For IODE use only.*

Date received: 19 Jan 2022

# ODINWESTPAC

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
|  Ocean Data and Information Network for the Western Pacific Region (ODINWESTPAC) |

1. *Project established by (provide reference to IODE session)*

|  |
| --- |
| Recommendation IODE-XXIV.4 (ESTABLISHMENT OF THE OCEAN DATA AND INFORMATION NETWORK FOR THE WESTERN PACIFIC REGION (ODINWESTPAC) PROJECT) in 2017  |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Dr. YU Ting (Julia) representing Dr. SHI Suixiang on 18 January 2022  |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The 2021 real-time ocean and marine meteorological observation data were operationally collected. Thematic marine data and information products have been operationally updated and openly shared on ODINWESTPAC website. As the host center of ODINWESTPAC, NMDIS successfully held an Ad Hoc Meeting of ODINWESTPAC (online, Oct 28, 2021),addressed the regional needs for marine data and information cooperation and provided a chance for facilitating the regional communication on better linking ODINWESTPAC with the IOC/WESTPAC and other international cooperation projects. Bilateral cooperation between Malaysia and China on marine big data was smoothly conducted. The 2021 China-Southeast Asian countries and Ocean Teacher Global Academy Tianjin Regional Training Center joint online training course on ‘Ocean Data Stewardship in the Decade of Ocean Science for Sustainable Development’ was successfully held during 7-25 June, 2021.  |

1. *Assumptions and risks*

|  |
| --- |
| The COVID-19 pandemic put risks on international ocean science and technology cooperation. In 2021, the implementation of Second ODINWESTPAC Advisory Group Meeting was postponed due to the pandemic. It is suggested that ODINWESTPAC member states to further improve their participation in the project activities. The UN Ocean Decade would bring us new cooperation opportunities.  |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Well-functioning web portal (http://www.odinwestpac.org). |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Operationally updating 21marine observational datasets online with the volume of 581GB  | completed |
| PI2. 2021 real-time analysis data of temperature, geostrophic current, density, sound velocity, salinity: horizontal resolution: 0.125°, vertical: 51 standard layers, temporal: daily  | completed |
| PI3. 150 new registered website users and accumulated downloading data volume of 330GB  | completed |
| **Project Outcomes** |
| O2. Ad hoc meeting of ODINWESTPAC online  |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. 29 participants from 7 ODINWESTPAC countries participated in the meeting, and built connection with 2 projects, EMODPACE/CEMDNET, and CSK- 2  | completed |
| **Project Outcomes** |
| O3. Implement relevant capacity building activities which specifically relate to ocean data and information management and service  |
| PI1. Training course on Ocean Data Stewardship in the Decade of Ocean Science for Sustainable Development (Online)with 15 virtual lectures. 37 participants from 11 countries participated in the training  | completed |
| PI2.International webinar ‘CURRENT ADVANCE IN MARINE BIG DATA: APPLICATIONS AND ISSUES’ co-hosted by the Institute of Oceanography and Environment (INOS), UMT and Marine Data Centre (MDC), National Marine Data and Information Service (NMDIS), China  | completed |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: ODINWESTPAC website is well maintained, and capacity building activities were smoothly conducted.  |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Operational running of ODINWESTPAC website, with observational data and products updated.  | completed |
| A1.2: The 2021 Ad hoc meeting of ODINWESTPAC (online)  | completed |
| A1.3: Online training course on Ocean Data Stewardship in the Decade of Ocean Science for Sustainable Development.  | completed |
| A1.4: International webinar ‘CURRENT ADVANCE IN MARINE BIG DATA: APPLICATIONS AND ISSUES’(online)  | completed |
| **Report on status of activities. Problems experienced and measures taken:** |
| ODINWESTPAC website was running well during 2021. The marine data and information were operationally produced, updated and shared online. Overcoming the impact of the pandemic, the Ad hoc meeting of ODINWESTPAC was held online. Training course on Ocean Data Stewardship in the Decade of Ocean Science for Sustainable Development and the International webinar ‘CURRENT ADVANCE IN MARINE BIG DATA: APPLICATIONS AND ISSUES’ were also successfully conducted online. Positive feedbacks from the participants were received.  |

Signed by Project Leader. 

Date. 2022-01-018

*For IODE use only.*

Date received: 2022-01-18

# ODINAFRICA

(no report received)

# ODINCARSA-LA

This form is to be completed for all **approved** IODE projects and activities. Project reports are to be submitted annually to info@iode.org (with *IODE Projects* in the subject line).

1. *Title of project/activity and acronym*

|  |
| --- |
| ODINCARSA-LA |

1. *Project established by (provide reference to IODE Committee session and Decision)*

|  |
| --- |
| Recommendation IODE-XVI.9 / Resolution IOC-XXI.8 |

1. *Annual report submitted by [name] on [date]*

|  |
| --- |
| Ariel Troisi – JAN 2022 |

1. *General overview of the project status/ Executive summary*

|  |
| --- |
| The network counts with 10 NODCs, 7 ADUs (5 OBIS) and 1 AIU, and they carry their activities individually. Limited and declining financial resources available from UNESCO RP to fund the ODIN had an impact on the possibility to address common activities, and overcome identified weaknesses as (i) inadequate funding, (ii) lack of focus, (iii) poor communication, and (iv) lack of visibility and coordination. Access to extra budgetary sources allowed continuing actions in specific areas (e.g. OIH and OTGA), thus providing important opportunities for development. In keeping with Decision IODE-XXVI.4.1.2, a closer link was established with IOCARIBE which translated, inter alia, into an active participation in the development of the regional component of OIH. OIH held 12 coordination meetings through 2021, and hosted one webinar (JUN). The region has 3 RTCs and 1 STC of OTGA. In 2021, 13 training courses were delivered with a total of 490 participants. For a complete report on the status of the implementation of the workplan, please refer to the reports of OTGA and OIH. |

1. *Assumptions and risks*

|  |
| --- |
| Mobility of ODINCARSA-LA focal points results in a clear challenge on the ability to agree upon, plan and implement coordinated actions. The distribution of experts and infrastructure within the region remains asymmetrical. Main lines of action are currently contained in OTGA and OIH, and supported by local contributions and extra budgetary sources. Closer coordination with IOCARIBE and the Western Tropical Atlantic UN Decade Regional Planning Group may result in increasing activities and benefits for the region. Without appropriate and adequate planning, current activities may be at risk, emerging issues may result unattended, and existing opportunities may be missed. |

1. ***Annex II Part A****. Report on the status of the implementation of the workplan*

|  |
| --- |
| **Project Outcomes** |
| O1. Training (ref to OTGA RTCs/STC)O2. OIH-LAC (ref to OIH) |
| **Performance Indicators (2-5 maximum)** | **Status (empty for new projects)** |
| PI1. Deliver training services |  |
| PI2. Meetings and workshops to strengthen work and improve coordination |  |
| **Status of Workplan Implementation** |
| **Milestone/deliverable/work package** |
| M1: Providing a programme of training courses related to IOC programmes, contributing to the sustainable management of oceans and coastal areas and relevant to Member States in the region |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A1.1: Training courses | 13 courses delivered, 490 participants. Activity in progress |
| **Report on status of activities. Problems experienced and measures taken:** |
| Due to the CoVid 19 pandemic, all training courses were delivered online. This circumstance allowed for wider participation with a sensible reduction of operation costs. RTCs and STC worked in the regional context and language, addressing common goals as well as national goals, taking advantage of local experts and instructors. Details contained in OTGA reporting. |
| **Milestone/deliverable/work package** |
| M1: integrate the ODIS-architecture into the CHM-TMT, to enable the CHM-TMT to be a fully functional hub for the Ocean InfoHub, and a demonstration of the ODIS-architecture. |
| **Activities** | **Status (completed, in progress, postponed, cancelled)** |
| A2.1: Identification of 3 regional partners, report of correspondence, agreed work plan and timeline with each partner. | In progress |
| A2.2: Implement the ODIS-Arch on CHM LAC to retrieve and expose data from a data provider that implements the Schema.org vocabulary and JSON-LD (Product: Document with architecture description) | In progress |
| **Report on status of activities. Problems experienced and measures taken** |
| OIH held 12 coordination meetings, and hosted one webinar (JUN) in 2021. All activities were carried out online. For a complete report, kindly refer to OIH reporting. |

Signed by Project Leader.

Date.

*For IODE use only.*

Date received: 4 Feb 2022

# ODINCINDIO

Response from Justin Ahanhanzo, IOC:

The short response to your request is that to my knowledge, there is no ODINCINDIO activity for many years.

Thanks.

Justin

[end of document]