Intergovernmental Oceanographic Commission

Reports of Governing and Major Subsidiary Bodies

IOC Ocean Best Practices System Steering Group Sixth Annual Meeting (SG-OBPS-VI)

12-14 November 2024
Paris, France
[Hybrid]

EXECUTIVE SUMMARY

The Sixth Annual Meeting of the IOC Ocean Best Practices System Steering Group (SG-OBPS-VI) was held in Paris, France, on November 12–14, 2024, in a hybrid format. Thirteen members attended in person, and twelve were present online. The IOC Ocean Best Practices System Steering Group (SG-OBPS) convenes annually, supplemented by monthly virtual meetings, to review progress and advance the work plan.

The meeting provided an opportunity to review the progress of work packages, evaluating the implementation of the 2024 work plan, and discussing the maintenance and developments of the repository. Technical upgrades, such as the DSpace update and analytics reconfiguration, were highlighted alongside efforts to streamline repository content criteria and conduct content evaluations to make sure the repository is fit for purpose.The role of endorsing entities in managing best practices was also extensively discussed, and the need for a rigorous review process, and strategies to enhance global representation and funding.

Recommendations from the Advisory Board were also discussed. The Advisory Board emphasized the importance of stakeholder engagement with regional and funding organizations, and the need for trust-building mechanisms to strengthen OBPS. The development of a comprehensive roadmap and implementation plan emerged as a priority, supported by a biennial review cycle for strategic alignment.

Strategic discussions focused on expanding OBPS' role within IOC mandates to enhance societal impact and visibility, highlighting the need to revise the current Terms of Reference. The Steering Group proposed a 'federation model' to better integrate IOC Programmes and Regional Sub-commissions. This model aims to improve global representation, provide a structured framework, attract additional funding, and position OBPS as a universal repository for ocean science and applications. A draft of the revised Terms of Reference was prepared. The meeting concluded with the Steering Group agreeing to the addition of new members. Rebecca Zitoun and Cristian Muñoz Mas were confirmed as the new OBPS SG Co-chairs, while outgoing Co-chairs, George Petihakis and Rene Garello, were sincerely thanked for their invaluable contributions.

Suggested citation:

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1. OPENING OF THE MEETING

Rene G. and George P. (OBPS Co-Chairs) welcomed and opened the session.

All attendees agreed to record the session (see RECORDINGS).

A comprehensive list of the meeting participants can be found in Annex I.

2. ADMINISTRATIVE MATTERS

2.1 Adoption of the agenda and timetable

Agenda items and timetables were reviewed and discussed with the whole SG. Some items were requested to be moved. For instance, a change in agenda item 10 "Governance and Membership second year revision" was requested to be moved before agenda item 7 "Strategic plan", as it was considered important to cover item 10 before the conversations on item 7. The order of agenda item 4 was also prioritised, so colleagues in Australia could present at a more convenient time. When going through the agenda, it was pointed out that the strategic plan timeline is mismatched with the timeline of the work plan and budget. Therefore it was agreed that the current strategic plan, covering the period 2021-2025, should be updated to include 2026, instead of having a strategic plan 2026-2030 as originally planned.

2.2 Working documents

Working documents were uploaded on the event site in OceanExpert. During the discussion on various working documents, Rene G. suggested the importance of a roadmap in strategic planning, similar to what is implemented as part of industrial projects. He proposed developing a five-year roadmap that should be reviewed midterm to adapt to changing conditions. He also explained the difference between a strategic plan and an implementation plan. It is suggested to have a detailed implementation plan with annual KPIs (Key Performance Indicators), closely integrated with the road map and a five-year strategic plan.

3. STATEMENTS FROM THE IOC PROGRAMMES

Lotta F. presented IODE (International Oceanographic Data and Information Exchange) views on OBPS, emphasizing the need for support from all IOC programs and the inclusion of representatives from IOC programmes in the SG-OPBS. It was suggested that OBPS should support all IOC programmes (as well as regional subcommissions) and work in close cooperation with IODE, GOOS, and other IOC programmes. She also highlighted the following:

- OBPS, as a IODE Programme Activity, must adhere to IOC Manuals and Guides No. 91 , https://oceanexpert.org/document/32232.
- OBPS should continuously contribute to ODIS (the Ocean Data and Information System)
- OceanExpert should be used as repository for working docs, reports etc
- The contribution to the UN Ocean Decade and the Sustainable Development goals must be reflected in the new terms of references (ToRs)

- Draft decision on new OBPS TORs and Steering Group must be submitted to the IOC Assembly in June 2025

The discussion highlighted key distinctions and developments related to the management of best practices and metadata. It was noted that while OBPS hosts all kinds of practices, the Ocean Data and Information System (ODIS) focuses solely on harvesting metadata for best practices. ODIS is currently refining its Terms of Reference (TORs) for IODE. During the GOOS/IODE Data Management meeting, discussions centered on data architecture to enhance collaboration across IOC programmes, emphasizing the need to link best practices with metadata effectively. Clarifications were sought regarding the overlap and differences between OceanExpert, Aquadocs, and OBPS, particularly concerning how OBPS manages duplicate documents across different platforms. This led to a conversation about DOIs and versioning within OBPS, where it was explained that all versions of a document share a unique DOI, with the system displaying all versions from the oldest to the most recent.

Lotta F. noticed the long duration for the endorsement process and she wondered if it is it possible to reduce the long handling time for a new guideline to be endorsed by OBPS to ensure timeliness.

The discussion clarified that in the context of OBPS, the term “New Guideline” is synonymous with “Best Practice,” but OBPS itself does not endorse practices. The timeline for obtaining endorsement of a practice was noted to vary significantly, ranging from several months to several years. The status and usability of the “endorsed” tag within OBPS were also examined, with a consensus that improvements are needed to make the tag more effective for users in identifying and locating endorsed practices. A key conclusion was that enhancing the User Experience (UX) of the OBPS EDS (Enhanced Discovery Service) is a priority for future development. However, it was emphasized that this improvement requires additional funding, as it cannot be supported through the operational budget alone. It was pointed out that including IOC programmes would mean that they are also part of the SG, and be invited to participate in SG meetings. A list of IOC Programmes can be found in Annex II.

Joanna P. then turned to a GOOS perspective of OBPS and explained how OBPS should align effectively within the frameworks of GOOS and IOC. The following outcomes were anticipated:

- **Integration with IOC Data Architecture**: OBPS should contribute to the development of a cohesive IOC data architecture, seamlessly interconnected with broader oceanographic, atmospheric, and Earth system data frameworks.
- **Enhanced Data Products**: Focus on helping to deliver data products derived from Essential Ocean Variables (EOVs) and Essential Climate Variables (ECVs) to meet user needs.
- **Expanded Data Accessibility**: Enable greater availability of relevant and high-quality data to a broader range of users, ensuring it is appropriately curated and accessible.
- **Meaningful Data Metrics**: Establish robust data metrics to evaluate impact, usability, and alignment with broader scientific and operational goals.

These outcomes will ensure that OBPS not only supports GOOS objectives but also enhances its role within the global data and knowledge ecosystem.

Enhancing how users find information within OBPS is essential to meet diverse needs, whether they are seeking innovative new methods, community-adopted practices, endorsed practices, or solutions tailored for specific situations. A key challenge lies in the lack of clarity in identifying true best practices among available documents, many of which are not categorized as methods or practices. Endorsement efforts focus on recognizing community-adopted practices, while metadata should be expanded to better align with other parts of the value chain.

OBPS must continue advocating for the creation and refinement of best practices, actively facilitating their development and review in collaboration with communities. This includes fostering convergence on practices and identifying areas where standards are necessary to promote interoperability and consistency.

The role and format of the OBPS workshop should be evaluated to ensure alignment with its mandate, balancing the need for community engagement with the practicality of delivering actionable outcomes. The workshop should serve as a platform for fostering practice convergence, encouraging standardization, and addressing gaps highlighted by stakeholders. Additionally, OBPS must echo expectations and questions raised by IODE, reinforcing its role as a critical enabler within the broader ocean science and best practices ecosystem.

Three actions have been identified from this agenda item:

Action 3.1: OBPS to participate in the IODC-III: Third Ocean data conference/IODE28.
It is discussed that Crisitian (new Co-Chair) would be the best person to attend this meeting.

Action 3.2: Develop a plan to better coordinate OBPS activities with other IOC programmes and ODIS Steering Group.
Peter P. to inquire that OBPS participates (as observers) in IOC Regional sub-commissions 2025 first quarter meetings (Feb-April) to present OBPS benefits/vision for IOC, user feedback, high level of downloads and examples of endorsed BPs translated using Deep L (IODE).

Action 3.3: Co-Chairs to contact the regional sub-commissions to present OBPS and understand their needs for best practices.

4. REPORT ON IMPLEMENTATION OF THE 2024 WORK PLAN

4.1 WP 1 SG Governance: Establishment of the OBPS Advisory Board

The OBPS Advisory Board was formally established following its proposal during the SG-OBPS-V Annual Meeting in December 2023. A community call in April 2024 received 15 responses, supplemented by eight personal invitations, leading to the selection of eight members in October. The inaugural meeting held in the same month included active participation from ⅞ Advisory Board members and eight SG members. The Advisory Board's primary objectives are to provide strategic advice, identify ocean research needs, and enhance global interoperability in ocean science and technology.

During the meeting, members emphasized the importance of stakeholder involvement

and trust-building via verification mechanisms. They recommended extending OBPS beyond ocean observation to include industries, and congratulated the success in the OBPS bottom up approach, as well as highlighted opportunities for training in best practices under challenging conditions.

Next steps are to include the link of the Ocean Expert Advisory Board group on the OBPS website: https://oceanexpert.org/group/552, and summarizing the meeting outcomes in the December NewsFlash. The Advisory Board plans to convene biannually, focusing on strategic advice with targeted questions in future meetings.

Action 4.1: Include the Ocean Expert link of the Advisory Board group on the OBPS website

Action 4.2: News piece of Advisory Board meeting outcomes for December NewsFlash

4.2 WP 8 OBPS 'Ocean Practices for the Decade' Coordination

Currently, there are seven Ocean Decade endorsed projects, with two recently approved and two under review. Rebecca Z. explained that this year has been marked by slow progress due to limited community interaction, minimal participation from Ocean Decade endorsed programs in OBPS workshops and lack of community interaction on the Stakeholder Forum.

Despite these challenges, the team highlighted the importance of engaging Ocean Decade programs through initiatives like featuring them in the OBPS NewsFlash updates, leveraging existing connections, and revisiting strategic alignments.

Notable successes included the OBPS Ambassador program, and strong collaborations with the OceanPredict Decade Collaborative Centre (DCC) and the Decade Coastal Resilience DCC. The latter partnerships exemplify effective engagement with DCC. However, engagement with the Data Coordination Office (DCO) remains stalled due to operational and funding issues. As for the Ambassador program, most of the Ambassadors were and still are very active in OBPS activities, including the annual workshop and other community engagement activities such as presentations. The first Ambassador cohort will finish their term at the end of 2024.

Looking ahead, DCCs represent a significant opportunity for OBPS within the Ocean Decade framework. An analysis of Ocean Decade vision papers revealed that 80% referenced best practices as a priority for achieving 2030 goals. This insight emphasizes the need to align OBPS strategies with DCC priorities, challenges, and the broader Ocean Decade strategy to ensure meaningful contributions to Decade outcomes. There is also the need to implement a second Ambassador cohort, after a review of the activities and an adjustment of the program to better suit OBPS and the Ambassadors.

Action 4.3: Analyze the successes and challenges of the OBPS ambassador program and decide on next steps.

Action 4.4: Analysis of the mention of the need of BP in Ocean Decade 2030 vision white papers to align OBPS strategies with DCC priorities, challenges, and the broader Ocean Decade strategy.

Action 4.5: Implement a communication strategy to better promote new endorsed practices within IOC maillist, Ocean Expert, partner mailing list, stakeholder.

4.3 WP 5&6 Communication, Outreach and Community Engagement

The introduction to Workshop VIII, presented by Virginie VDV., highlighted the efforts of the organizing committee, including the division of responsibilities and meeting schedules (bi-monthly, weekly, and bi-weekly). A major concern raised was the significant time investment required for the workshop. It is recommended to plan the workshop before summer (June) or after October (November), avoiding the holiday period in the Northern Hemisphere (July/August), which makes it difficult to work on this during summer.

Originally designed to gather recommendations for OBPS, the workshop has shifted focus over time toward promoting the creation and finalization of Best Practices (BPs). While the workshop facilitates community engagement and fosters BP development, it has become clear that its mission has evolved. This year's event featured 72 sessions and attracted 700 participants, showcasing its success as a bottom-up process. However, the heavy workload associated with an annual workshop has prompted discussion about its sustainability and future format.

It is considered whether the workshop should continue as a large-scale annual event or transition into smaller, purpose-driven workshops tailored to specific communities (e.g., interoperability, regional needs). Tailored workshops could foster more meaningful connections within communities while raising awareness about thematic issues. It is suggested to broaden participation beyond academic circles to include IOC groups and diverse stakeholders. Regional workshops could enhance effectiveness by addressing specific geographic and cultural contexts. Other recommendations, included to establish a more structured approach to tracking and utilizing workshop outcomes. Sessions should have clear objectives, and mechanisms for follow-up on recommendations. OBPS should also provide better guidance to session leads to ensure actionable and reusable outcomes. It was also suggested to do the workshop every 2 years and not annually.

Within the main key outcomes collected from the workshop reports, Interoperability remained a key challenge, with high implementation costs limiting progress across communities. Workshops must continue addressing such critical themes while balancing the significant resource demands. Feedback suggested exploring alternative formats, such as offering workshops as a service from OBPS rather than maintaining the current large-scale conference model.

This format shift could help streamline efforts, reduce the workload on organizers, and better align the workshop's format with its evolving mission to serve as a platform for community engagement and BP dissemination.

Action 4.6: Enhance social media communications channels: Linkedin, youtube for OBPS activities. 2–3 additional members are needed to manage these more effectively.

Action 4.7: Discuss with Workshop committee, Co-Chairs and SG members, the future of the workshop format.

Action 4.8: Conduct a participant survey to gather feedback on key outcomes and overall experience.

4.4 WP 7 Training and capacity development

Carol M. reported that this year, WP7 made significant progress in training and capacity development initiatives. Key achievements included the design of the ADAPT project training program, developed under the guidance of an expert advisory team, and the update of the OBPS training course on the OTGA platform into a self-paced format launching in November 2024. Additional courses, such as CoNCENSUS (focused on underwater visual surveys) and BlueCloud2026 (centered on Virtual Research Environments), are under development with launches anticipated in 2025. Efforts to integrate OBPS into university curricula have begun, highlighted by a biodiversity monitoring curriculum in collaboration with the World Maritime University (WMU) and the International Maritime Organization (IMO), targeted for deployment in 2026. The curriculum also seeks inclusion in Coast Guard and maritime operational trainings, with discussions ongoing to engage other maritime agencies.

The practical component of these courses emphasizes on-site replicability and the application of best practices, from survey methods to data processing. A framework for curriculum development has been initiated, proposing both self-paced online materials and language-adapted content, with initial phases completed but additional slides and lectures still in progress. Collaboration with professors to implement automated documentation of best practices were outlined as a key strategy moving forward.

Challenges in this work included delays in administrative processes, slow progress in training material development, and logistical issues with implementing university curriculum initiatives. Mitigation strategies, such as increased collaboration with administrative offices, hiring paid experts, and streamlining through the OTGA platform, have been enacted. Despite these hurdles, deadlines for some tasks, like content development for the Iliad training course, require further adjustments.

Looking ahead, WP7 aims to replicate the ADAPT model in regions like Africa, prioritize training on specialized ocean science topics, and continue supporting ongoing activities from 2024. Practical exercises tailored to different themes will play a crucial role, with an emphasis on linking them to university curricula and enhancing user engagement. The team also plans to finalize the biodiversity curriculum for WMU while exploring opportunities for collaboration with other maritime agencies.

Action 4.9: Complete a 3h university course on general best practices and applications [within 6 months]

4.5 WP 4 Publications, Convergence and Endorsement

This year 18 new articles have been published in *Frontiers in Marine Science: Best Practices in Ocean Observing*, with two additional articles expected by the end of the year. Key advancements in the endorsement process include the development of a endorsement guidance document, a promotional flyer, an "endorsed" filter in the repository, and a maturity model to support the process. WP4 also contributed to

testing new content criteria and they planned to contribute to the retrospective review process for best practices.

Challenges included search interface issues, where endorsed practices do not consistently appear at the top of search results, and a lack of endorsement examples to guide users. Mitigation efforts focus on interface improvements and providing clear examples and guidance documents for endorsement applicants. A medium-impact concern was low engagement during the test phase of the best practice review process, prompting the need for a transparent review strategy and clearer engagement mechanisms for reviewers.

Looking forward, WP4 aims to: (1) actively participate in the best practice review process by developing a robust review strategy; (2) collaborate with WP5 and WP6 on outreach initiatives, including planning for 2025 events such as the Ocean Decade; and (3) strengthen engagement with IOC regional programs to enhance global coordination and adoption of endorsed practices. These efforts will support the convergence and dissemination of best practices within the ocean science community.

5. REPORT ON THE OBPS REPOSITORY

Agenda item 5 was provided by Pauline S (OBPS Repository Manager), who introduced the item with a short history of the repository. She explained that the repository was developed as a deliverable under the IODE Ocean Data Standards Project, and has seen significant progress since its inception in 2014. It began with 163 entries from the JCOMM Data Standards Catalogue. The repository was designed to be web-based, searchable, and open-access, utilising metadata standards and persistent identifiers (PIDs). DSpace software was chosen due to existing support within IODE systems and prior developer experience with the software.

In 2017, during the ODIP II Workshop in Galway, the AtlantOs Project Best Practices Working Group (BPWG) sought a repository, and the Ocean Data Standards repository was offered for their use. This collaboration was solidified later that year at the Evolving and Sustaining Ocean Best Practices Workshop, organized by BPWG and IOC. By 2019, the OBPS was formally recognized as an IOC project, the repository was renamed the IOC Ocean Best Practices System, and a part-time manager was appointed. Significant upgrades followed in 2020 with the implementation of an Enhanced Discovery Service (EDS), hosted on Amazon Web Services (AWS).

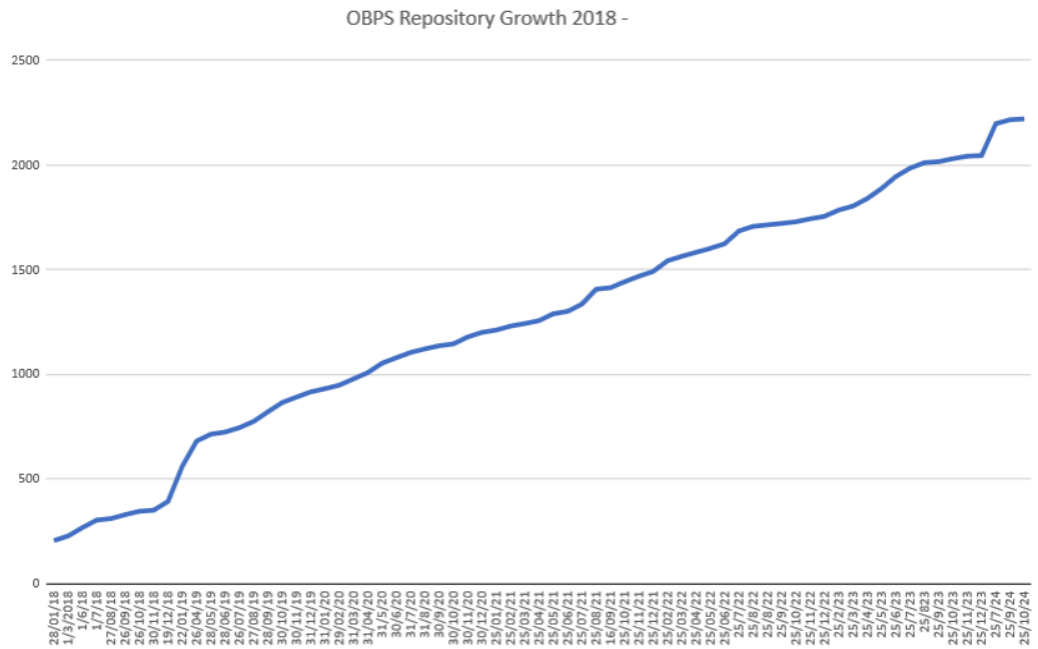
5.1 Metrics

Metrics are essential for justifying sustainability and evidence the existence of a service or project product. Metrics for repository performance have become critical. Three main sources are used: DSpace SOLR statistics, which require customization for detailed insights; Google Analytics 4, which employs an event-based model and demands manual adjustments; and Altmetrics, which tracks online engagement across various platforms. DSpace and Google Analytics are challenging in customization and integration. It was highlighted that the OBPS Metrics Dashboard (https://www.oceanbestpractices.org/ocean-best-practices-systems/repository/metrics) is under development; it has no content yet but will offer a new user interface for metrics and the potential for integrating different sources was discussed. Plans to improve these metrics include configuring SOLR, and adapting GA4, and reconfiguring

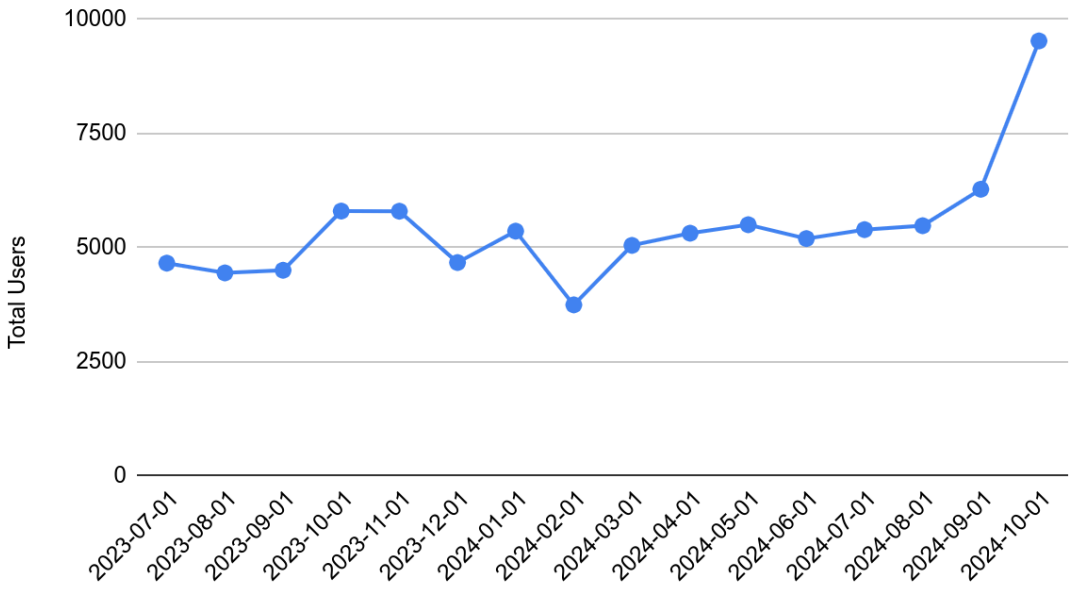
Altmetrics to better align with DOI identifiers. These updates, however, are dependent on funding and are part of a 2024 Request for Proposal (RFP).

The OBPS Metrics Dashboard, developed by Cristian MM and Arno L, is in development but requires significant upgrades to metrics reporting to populate the dashboard. There is now a proof of concept for a new OBPS user interface (UI). It is hoped that extra budgetary resources (EXB) will cover the future development of the system. The conclusions drawn indicate that metrics are not currently exploited because of significant work required on metric reporting configuration and customisation. As seen in sites such as LinkedIn, there is significant potential to better understand user behavior and identify users, which opens up opportunities for community building and fundraising.

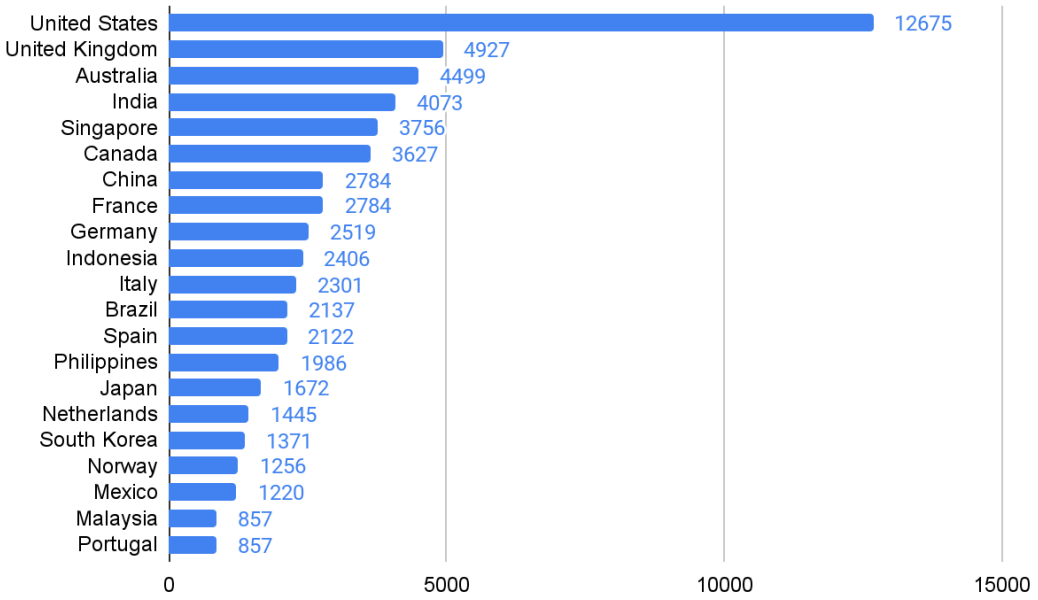
Cristian MM presented a number of metrics showing that deposits have grown steadily, reaching 2,226 by October 2024 (Graph 1), with 391 registered users able to submit entries. The system has also seen an increase in user engagement, with a total of 86,720 users (Graph 2) from a wide diverse country origin (Graph 3) recorded between July 2023 and November 2024.



Graph 1: Number of submissions to the Repository from January 2018 to October 2024.



Graph 2: Number of total users per country from July 2023 to October 2024



Graph 3: Number of total users per country from July 2023 to October 2024

Action 5.1: Design a new metrics report that links users country information to the number of institutions and or researchers per country (not population).

5.2 User feedback

User feedback is collected via the online help desk and feedback mechanism, through stakeholder Interactions, direct engagement with participants in workshops, conferences and user contributions through the "News Flash" feature, or submitted

directly to repository@oceanbestpractices.org. Each document record in the repository includes an option for users to provide rating feedback.

The most immediate feedback received is when the repository experiences downtime. In such cases, the IODE IT team responds promptly to reinstate the server, except during weekends or periods of vacation coverage. In addition, the ORCID lookup functionality does not work well but the repository relies on a DSpace/ORCID plugin, which unfortunately cannot be modified.

Looking ahead to the 2025 repository enhancement budget request, it was confirmed that it included a feature enabling users to contact and feedback to the creator directly to discuss practices. This process will include necessary safeguards to ensure privacy and security.

Additionally, It has been advised to explore NiMMbus (https://www.nimmbus.cat/), a system that integrates the Geospatial User Feedback (GUFS) standard (http://www.opengeospatial.org/standards/guf). Originating from the EU FP7 GeoViQua project, this standard supports user engagement by enabling comments, ratings, and questions. These interactions can be linked to assets within a catalogue using data or metadata identifiers. The importance of user feedback and options for providing feedback is recognized.

5.3 Technical Plan 2024-2025 (including WP2/3 Progress Report)

It was highlighted that the Technical Plan presented was only a draft that can be finalised when the availability of extra budgetary funds can contribute to the technology enhancements. The document included technology aspirations for future-proof technology:

- provide an intuitive portal that is easy to use
- support submission of practices with maximum automated assistance
    - provide clear criteria for its content scope with AI assisted evaluation
    - provide automated ingest of metadata from full text files
    - provide automated semantic indexing using additional recognised vocabularies
    - provide a system to monitor the review of versions
- provide advanced search capabilities
    - offer users the ability to identify good - better - best practices

The WP2/WP3 report emphasized key priorities as identified in the draft technical plan document, but also highlighted issues. The primary issue is the technology enhancement contract funded by the JERICO S3 project in 2024 (IEEE Partner). The scope of the contract included: implementing an interface for selecting the EOV vocabulary (with further integration via NVS/BODC under discussion), adding the 'Marine Regions' vocabulary for interface selection, automating citation generation, addressing issues with version control, DOI assignment, and identifying resource URLs as Publisher/Code Repository or Dataset. Additionally, input help text edits were made.

Although the work is fully implemented and operational on the contractor's servers, it has not yet been successfully deployed on the IODE/VLIZ servers. The contractors do not have access to the IODE staging repository and are dependent on IODE IT to resolve the access issues. Moving forward, action is needed to resolve the stalemate,

implement staging repository enhancements, and ensure the system meets user-friendly and operational standards, aligning with the broader goal of seamless functionality and consistency.

Additionally an RFP is being prepared by IOC to cover critical upgrades to the DSpace software, essential configuration of metrics as well as the addition of new metadata fields for endorsement and maturity level exercises. It also includes the identification of journal titles in DSpace search results and improvements to the display and accessibility of Communities on the DSpace submission landing page.

Discussions arose on utilising an OceanExpert id for unified user identification with the repository highlighting the benefits and challenges of achieving compatibility.

Action 5.2: Arno L to investigate the possibility to use OE as a login authority for contributors logging in to DSpace Repository

Action 5.3: Arno L to investigate the possibility to use OE-id to identify the authors (that do not have an ORCID)

Action 5.4: Arno L to request VLIZ to permit the ETT Contactors access to the server hosting the staging version of the Repository to implement the completed contract enhancements

Action 5.5: Patricia C to progress the IOC RFP to obtain the quote cost including upgrading DSpace and then agreement to place the contract

6. REPOSITORY CONTENT MANAGEMENT AND EVALUATION

The repository is a global, open-access resource supporting various ocean stakeholders. As such it accepts ocean science and services documents at various stages of maturity. However not all documents are classified as "best practices." Establishing a published criteria for document acceptance into the repository was recommended at SG-OBPS-V which would also be used for a review of existing repository content.

6.1 Criteria for Accepting Methodological Documents submitted to the OBPS Repository

The Criteria for Accepting Methodological Documents submitted to the OBPS Repository was developed in July-August 2024 by an SG subgroup: Frank M-K, Cristian MM, Jay P, Carolina P, Rebecca Z, and Pauline S. This document provides guidance to users and reviewers to evaluate whether a document should be included in the repository. The assessment criteria is based on the repository's topic scope and methodological document requirements - such documents can be produced as guidelines, protocols, standard operating procedures). The submission workflow includes evaluation by the Repository Manager and any additional reviewers based on these criteria, and if accepted, it will be included in the repository with appropriate metadata. Documents not meeting the criteria will be returned with feedback. The criteria aims to eliminate reviewer subjectivity. and introduces the basis for consistency in reviewers' decisions.

It was proposed that the description of the topic scope should align better with the IOC mandate and mission and the non-exhaustive topic list should be removed. It was supported in the criteria to include when reviewing a document to also use the title, abstract and introduction to determine if a document is a method document. It was commented that an input field could be added on the repository submission interface for authors to explain why their document is a method document.

It was suggested the Guidelines could be published in OceanExpert, Aquadocs, and also as an IOC Manual and Guides though it was pointed out that such a short document may not be appropriate for the Manual and Guides series. The Criteria could be made available in IOC official languages, including Russian.

6.2 Repository Content Review survey and Review Exercise Worksheet

In SG-OBPS-V a recommendation for a review process of existing repository content to be implemented was proposed. A trial review was conducted in October 2024, and the formal review exercise was requested to all SG members to participate on November 1st, focusing initially on the CAPARDUS Collection. Of the 10 records reviewed, 8 were completed, resulting in 6 retained and 2 withdrawn. However only 3/9 members participated in the trial review, despite reminder calls. Therefore, the sample size was too small to draw meaningful conclusions.

Key observations from the trial:

- Review time ranged from 10 to 20 minutes per document. Calculating with the first major exercise involving 200 records, it is estimated the need of 67 hours (at 20 minutes per record).
- Each document required at least three reviews unless the first two reviewers reach agreement.
- Patricia reported enjoying the process and found it educational, though all acknowledged that certain decisions were challenging.

It was noted that volunteer time and overseeing the review process requires significant effort and careful coordination. Emma H recommended that SG members including Patricia C should work on reviewing 10 records per week. Patricia pointed that the current review process is very complex and takes too long, having to go through a link survey, answering questions, that could be more rapidly gathered directly in a spreadsheet. Simplifying this process could benefit to get more volunteers doing the exercise. In response it was confirmed that many ways of collecting reviews independently by each reviewer had been investigated and the present completion process once experienced more than once was straightforward and also provided detailed analysis of the results. Assessing the document was the most time consuming part of the survey.

6.3 Maturity Level/Scores Implementation in OBPS

The Maturity Model outlines the progression of ocean practices toward higher maturity levels, characterized by attributes and criteria at each stage. The model defines five maturity levels, including formal documentation and open availability (Level 3), advancing through broader adoption, verification, and standardization (Level 4), and culminating in regional adoption, expert endorsement, quality assessment processes, user feedback and training provisions (Level 5). The top three levels are noted as: 3 - documented - a good practice; 4 - adopted - a better practice; and 5 - sustained - a

best practice. Through the model, a best practice is defined through specific attributes that can be assessed “with specificity”.

The maturity of practices is assessed through interviews with principal authors or organizations, evaluating attributes and identifying areas for improvement. Of 55 reviewed practices, almost all reached Level 4, with two achieving full Level 5 attributes. Remaining gaps typically involve endorsement, improvement protocols, and training. Feedback indicates the model clarifies the path to best practices.

6.4 Endorsement Progress

Endorsement plays a crucial role in achieving recognition as a best practice. Endorsement processes require that practices have undergone transparent community review, have adoption by multiple organizations, received leadership approval, be available and identifiable within the OBPS repository, be updated at relevant timeframes or have a maintenance plan for future updates, include description of estimating uncertainty or heterogeneity of a quantity (if applicable); and follow recommendations for metadata standards and file formats for archiving in international data centers.

A detailed endorsement workflow governs applications, involving submission, completeness checks, and expert review of the endorsement actions. The endorsement backlog includes review of endorsement requests for practices in progress, and with 10 GOOS Endorsed Practices and 1 IOOS Endorsed Practice

A comparison between endorsement processes of Hermes (2020) and Bushnell and Pearlman (2024) was presented. For example, the GOOS process focuses specifically on Essential Ocean Variable (EOV) templates and GOOS panels for review, while Bushnell's approach, which is largely aligned with the Hermes process, adopts a broader possibility of organizational participation in endorsement and adds a request for estimating uncertainty, making it more inclusive.

The proposed application endorsement process, involves the following steps:

- Submission of a Letter of Recommendation (LoR) to repository@oceanbestpractices.org
- Ensure the practice is held in the OBPS Repository
- Upload both the Application and the Letter of Recommendation (LoR) to the ENDORSEMENT APPLICATIONS folder under the Organisation name
- Review both Application and LoR for information completeness only - return to submitter if missing details
- Confirm to submitter, receipt of fully completed Application and LoR and that it would be reviewed by the OBPS Endorsement Review Group within 10 days (OBPS endorsement review group including WP4 leads and other experts; Jay Pearlman, Pauline Simpson, and OCG rep?)
- Provide the link for the Application and LoR to the OBPS Endorsement Review Group and inform them that the application is available for review and request decision within 10 days. Link to an Endorsement Application Decision sheet for the reviewers to complete.
- If approved, submitter is informed and is sent an OBPS Endorsement
- The repository document record is annotated and uploads the endorsement certificate

- Maturity model table is updated
- If not approved, a letter is sent to the organization explaining the reason and recommending areas to be addressed.
- All documentation for the endorsement stored in the ENDORSEMENT APPLICATION folder

An example from EMODnet Chemistry showed the process presented.

The endorsement process of Bushnell expands the opportunity for endorsement. In this process, the organization functions as an endorsing body by providing a recommendation letter, while the assessment of process conformity resides with OBPS, which evaluates the submission. However, this framework lacks a defined management process for the endorsing organization. In defining the endorsement process, the importance of organizations managing their review processes and documenting them was recognized. Organizations should be responsible to update and maintain their best practices and not just the authors.

Fundamental questions and issues raised during the meeting, regarding the scope of the endorsement. Are we endorsing organizations, documents, or endorsing bodies themselves? This distinction needs clarity to avoid inconsistencies. A top-down approach for endorsement is suggested to ensure consistency and accountability in decision-making. Currently, there are two guidelines: one from GOOS and another specific to OBPS, which are quite similar, as seen from the comparison presented and discussion to converge these was carried out prior to the SG meeting. Other concerns are raised about the sustainability of best practices produced by project-based organizations, that by nature would be difficult to reach to the endorsement process. This could be addressed with larger organizations taking the lead in sustaining project-based best practices. It was also recommended that organizations have a sustained process for managing best practices, as indicated in the Bushnell process. However, it is recommended to follow the Bushnell process or the Hermes process rigorously, so the repository doesn't end up with many practices being wrongly endorsed by their own organizations.

Addressing these points will help streamline the endorsement process, ensuring it is robust, transparent, and universally applicable. Other recommendations emphasize consistent global definitions and streamlined convergence of processes to support the ocean community effectively.

Action 6.1: Review of the Repository Content Guidelines to align with IOC mandate
Pauline S to replace the word ‘Research’ with ‘Science’ and ‘Applications’ with "Services’. Rename the document to Ocean Best Practices Repository Content Guidelines, ensure it aligns with the IOC mandate and remove non-exhaustive subject list. After the above text changes to the Guidelines it will be used for submission assessment

Action 6.2: To prepare template text to be included in the repository system reject process to use when informing submitters a document does not comply with the repository content guidelines (Pauline S)

Action 6.3: AI Testing for Document Validation
Investigate the use of AI tools (e.g., ChatGPT) to validate 10 documents against the

Repository Criteria. It was noted that this could only be initiated once a sufficient dataset of criteria acceptable documents (1000+ documents) is available for training the AI.

Action 6.4: Pauline S to continue to organize the Repository Content Survey exercise

Action 6.5: Pauline S to publish the Ocean Best Practices Repository Content Guidelines available on the Repository interface; OBPS Website repository page; OceanExpert and AquaDocs and investigate whether appropriate for the IOC Manual & Guides series.

Action 6.6: Translation Demonstration and AI Investigation
Pauline S to continue to obtain translations of new and not yet translated endorsed Best Practices using DeepL (IODE) or other appropriate translation service. Any costs would need to be included in a budget request. Any record including machine translation upload will include the already standard machine translation disclaimer. For long-term solutions, she will explore AI tools (e.g., ChatGPT) for user on-demand translation of endorsed practices, subject to expert review where feasible.

Action 6.7: Good, Better, Best Practice Definitions
Jay P to adapt Mantovani's definitions of good, better, and best practices to ensure they are concise and suitable for OBPS use. Example: best practice (is considered an endorsed practice). Endorsement proves the superior result across many other best practices within a community.

Action 6.8: Jay P to organise a meeting to resolve endorsement process

7. SG GOVERNANCE AND MEMBERSHIP SECOND YEAR REVISION

At IODE-27 it was agreed to restructure IODE into 3 programme components (OBIS, ODIS, OTGA), programme activities (including OBPS) and projects. Programme activities do not have a finite lifespan. They can receive some UNESCO regular programme funding but need to mobilize extra-budgetary funding to complement the RP funding. As a GOOS project, the OBPS would have a finite lifetime and thus the status of OBPS needs to be discussed with a view to the next years and to make its status consistent between IODE and GOOS. The recent IODE-GOOS data management meeting revealed a strong need for the various IOC programmes (global and regional) to collaborate more closely and to focus more on product/services delivery that has societal benefits (relevant to Marine Spatial Planning, Sustainable Ocean Planning). Therefore, whereas OBPS was focusing mainly on IODE and GOOS, OBPS will achieve more visibility and relevance by expanding its scope to the entire IOC mandate. For the above reasons it is proposed to re-define the ToRs of OBPS, its Steering Group and its membership to better reflect this expanded scope.

A proposal has been made to adopt a federation model. This approach will be presented for approval at the IOC Assembly, where new members from IOC will be invited to join the Steering Group. To address concerns about consistency in terminology, it is suggested to describe this model as a "federation of IOC global programmes, regional sub-commissions, and other partners." This federation model

will require consensus from all involved parties, including agreement on budget contributions. Advantages of the federation model**,** include the enhancement of global representation through regional sub-commissions, a clearer, more structured framework, the potential for additional funding to support expanded operations, and advance the OBPS repository as a universal and accessible storage for IOC-relevant ocean-related best practices. On the other hand, it is also pointed out that a larger Steering Group may reduce engagement in monthly meetings, although members would attend the Steering Group annual meeting, where critical decisions will be made.

The proposal will be submitted for discussion in February and March at IODE, the GOOS Assembly, and other IOC Programmes, before being presented to the IOC Assembly in June for final approval. While alignment with IOC Programmes will be sought, there is no apparent reason for resistance, as the federation concept aligns with the strategic priorities of many programmes. Enhanced IOC communication will also play a critical role in formally recognizing OBPS and facilitating its dissemination to broader audiences.

It is recommended to prepare a pitch 2-page document and 3-slide presentation to introduce OBPS to IOC Programmes during their executive meetings. The materials should focus on:

1. **Highlighting OBPS Contributions**: Tailor the message to each IOC Programme, emphasizing what OBPS can do for them.
2. **Demonstrating Value**: Address how OBPS enhances **data quality and decision-support frameworks**, avoiding a focus on the technological aspects.
3. **Cohesion Across the IOC Value Chain**: Illustrate how OBPS fosters integration and collaboration among IOC Programmes.
4. **Engaging Regions**: Include a generic slide seeking feedback and proposals from each region, ensuring their specific needs are addressed.
5. **Proof of Concept**: Showcase best practices translation efforts and their impact.

A document dated December 14, 2022, written by the SG-OBPS, states that Co-Chairs serve for a fixed term of office of two years, non-renewable. Whereas, the Rules of Procedure for IODE Programme Components, Programme Activities and Projects (2023), states that “Co-Chairs are elected for one inter-sessional period of the Steering Group (regular meeting), with the possibility of re-election for an additional term”. It is also noted that after two years in a Past Co-Chair role, they transition to invited experts.

Action 7.1: To formalize the process of SG membership. Prepare a Letter of Acceptance to serve on OBPS with conditions and responsibilities, and a letter to members leaving to acknowledge their contributions.

Action 7.2: Invite all IOC Programmes to participate in the SG-OBPS

Action 7.3: To prepare a pitch 2 page-document to present OBPS to the IOC programmes

8. OBPS STRATEGIC PLAN DEVELOPMENT 2021-2026

8.1 Addressing the SWOT analysis

It is proposed to review and update the current OBPS Strategic Plan 2021-2025 (updated 2024), to be updated until 2026, in order to align with the timelines of the biennial OBPS workplan and budget 2025-2026, and the evolving needs of the IOC and the broader community.

To achieve this, it is essential to evaluate key achievements and identify areas for improvement, forming the foundation for updating the strategic plan. In line with the recommendation to review repository search technology, as outlined in the Orientation document Orientation document OBPS_rev07Dec.docx, a Repository user assessment was conducted by Patricia Cabrera. This assessment simulated the experience of a new single user navigating the OBPS DSpace repository pages in search of a specific methodology. It involved multiple search scenarios, selecting specific communities, subjects, and metadata fields across both search interfaces, to comprehensively evaluate the system's usability and effectiveness. Key findings revealed inconsistencies in the descriptions of the repository and best practices across different access points: the repository gateway at https://repository.oceanbestpractices.org/ and the repository pages on the website. Additionally, the distinction between the standard and advanced search options is not immediately apparent. The website initially directs users to the standard DSpace search interface, which leads to a community list and may encourage users to begin their searches there, thereby overshadowing the advanced search option. The community list itself displays inconsistent categorization, and the subject classifications require standardization. In terms of functionality, the standard DSpace search proved less effective compared to the advanced DSpace search. The DSpace advanced search interface was significantly easier to navigate, offered a more user-friendly experience, and was notably more effective for broad searches refined by metadata fields such as EOVs and SDGs.

To address this, these recommendations were suggested:

- Improve the content and its presentation on the repository pages: Standardize our language about practices, best practices, etc..
- Assessment of Communities, how useful they are and who is behind them
- Create a brief video tutorial demonstrating how to efficiently perform an advanced sea.
- Establish controlled vocabularies/terms/metadata specific to data management and other IOC communities - originally designed for this ocean observing community
- Conduct an user survey assessing several aspects of the repository (communities, search options, etc) to be organised when the repository has been updated, enhancements implemented and a new search User Interface launched.

In response, Pauline S., the Repository Manager, commented that she had not been informed of the assessment report prior to this SG-OBPS-VI meeting and it was agreed she would review the assessment and provide responses in this Summary Report, after the meeting. Responses to Patricia C. report are provided **here**. In summary, as described above the assessment was based on '*navigating the OBPS DSpace repository pages in search of a specific methodology'.* Pauline responses highlight that

the DSpace Repository is the submission interface and is nowhere identified, developed or designated for OBPS Search, and should not have been included in what is a search function assessment. George P. (SG-OBPS Co-Chair) concluded that any new user of a database needs familiarity with using the database and its search protocols before they can fully navigate and obtain the best results.

The SWOT analysis presented in the Orientation document on the last SG-OBPS-V was discussed to assess current OBPS strengths, weaknesses, opportunities, and threats, using insights from the prior year's findings which contains last year's SWOT analysis. There was only time to discuss the Strengths and Weaknesses, and an action was identified to finilise the revision of the SWOT, to analyse the Opportunities and Threats and then examine the SWOT analysis.

OBPS Strengths: (In italics new additions to the 2023 version)

1. Establishment of community of practice related to ocean observing *and other areas.*
2. Establishment of online repository of best practices, with many best practices up and down loaded
3. Strong engagement of current members of Steering Group
4. Success in raising awareness of the importance of best practices
5. Established as the 'home' of oceanographic practices and best practices
6. Successful in attracting funding from European and other projects
7. GOOS Endorsed Practices implemented in response to community request, many downloads e.g. 6000
8. Success in establishing practices across disciplines, physical, biogeochemical and biological
9. Success in supporting and writing best practices (e.g. templates)
10. *Best practices appearing in EU Horizon calls and the ocean decade*
11. *Thought leadership in the area of best practices*
12. *Mature/Longeve System (7 years)*
13. *Searchability: enhanced discovery service*
14. *Capacity Development is transversal to other activities within the OBPS*

OBPS Weaknesses: (In italics new additions to the 2023 version)

1. Current mix of uploaded documents *(currently being addressed as of SG-VI)*
2. Expertise in Steering Group results in limited expansion of scope to other disciplines which limits scalability *(currently being addressed as of SG-VI)*
3. Efficiency and precision of E84 search technology is uncertain and not user friendly
4. Cost of adapting repository technology (DSpace) to new needs
5. Cost of EDS. No funding to address technical debt (DSpace, EDS and Metrics dashboard)
6. *Insufficient user information* to understand how to improve functionality and value for users *(currently being addressed as of SG-VI)*
7. Engagement beyond ocean observing in the value chain has been limited, data management, assessment, and modelling community not well represented. *(currently being addressed as of SG-VI)*
8. *Sustained funding not sufficient for core activities (maintenance)*
9. *Insufficient engagement from member states to provide in-kind (Threat?)*

10. Human resources in-kind contribution

Action 8.1: To form a task team to update the current OBPS Strategic Plan, road map and implementation plan (Finalise Revision of SWOT Analysis).

9. OBPS: OPPORTUNITIES FOR COOPERATION AND FUNDRAISING

9.1 Ocean Practices AISBL

The rationale of establishing the AISBL legal entity Ocean Practices (OP) is to secure long-term funding for OBPS, to support its expansion via grants, sponsorships, donations, and membership fees, and to allow for flexibility on administration issues (ie. hiring, travel, etc.). The purpose of OP AISBL is to:

- To promote the association's infrastructure, tools and services and the scientific and technological developments on which they are based;
- To encourage cooperation and coordination between its Members in the field of sharing, promoting, and creating best practice for the ocean research, monitoring and operations;
- Make resources available to its members for ongoing, targeted actions in the field of good practice for the ocean;
- Submit proposals driven by the association and its Members;
- To be a global forum that will strengthen community participation in the evolution of good practice for the ocean and its effective implementation;
- To be a resource that facilitates training and encourages interaction between scientists and technologists in order to create and use best practices for the ocean;
- Offer recognition to technologists by increasing the visibility of their good practices for the ocean;
- To maintain the link with IODE and GOOS, through the "Ocean Practices for the Decade" programme;
- To carry out all acts relating directly or indirectly to its objects. In particular, it may provide assistance and take an interest in any activity similar to its own.

The association is made up of the founding members and the members subsequently admitted. Obligations include supporting Ocean Practices AISBL tools and services, paying membership fees, and contributing to working groups. Regarding governance, the General Assembly meets annually (virtually or in person) and votes on key decisions. The Board of Directors consists of 3–7 members serving three-year terms. Statutes include 25 articles governing operational modalities. Bylaws regulate membership participation, roles, and financial contributions. The founding Partners are the Institute of Natural Sciences (Belgium), the Institute of Marine Research (Norway), and IEEE France. Key Officials include a President, Vice-President, Treasurer, and Secretary. Having completed the establishment process for the AISBL the next steps include the call for participation to those members already identified and contacted a few months ago and they have expressed their wish to participate .

9.2 External project opportunities and tenders

A summary of external EU projects where OBPS is involved was presented (Table 1). The aim of the tasks in these projects is to create best practices. The Ocean Practices AISBL, will be replacing the involvement of IEEE as engaged organizations. OBPS will be invited to the annual meeting of the AISBL.

It is noted that IODE/IOC should become involved earlier in the proposal process rather than being brought in later, often when asked to deliver a service without sufficient budget allocation. Rene acknowledges the challenge but notes that the situation has evolved. IODE/IOC can now act as a leader on certain projects, while OBPS can participate as a partner, but not as a lead. In the past, it was noted the need for a minimum budget request of USD100K per year for participation in EU projects, due to the significant time investment required.

Table 1: Summary of EU projects with a connection to OBPS

Project/ Activity	Major efforts	Organizations engaged	Approx. amount	Period
Blue Cloud 2026 (https://blue-cloud.org/)	Searchable and metadata indexable Open Access Catalogue of guidelines, including Best Practices in data management & sharing	IEEE France	63.90 K€	2023 - 2026
ILIAD (https://ocean-twin.eu/)	Creation and adoption of best practices and standards. Connection with OBPS	IEEE France	70 K€	2022 - mid2025
Obsea4Clim	Dissemination material Connection with OBPS	IEEE France	60 K€	2024-2028
CINEA	A comprehensive and user-friendly information system	IEEE France	68 K€	2024-2025

Action 9.1: Establish Agreement between IOC and AISBL using UNESCO standard agreement template. With annual annex for annual workplan

Action 9.2: Establish a methodology of the work between AISBL-OBPS on the involvement on external projects

10. WORK PLAN AND BUDGET 2025-2026

The OBPS Work plan & Budget 2024-2025, was revised for the year 2025. It was splitted in two parts, provisioning for two periods of 6-months (first semester and second semester), in order to allow the total budget for the second semester to be splitted among additional IOC Programmes including OBPS on their agendas.

The budget is organised in: Maintaining OBPS Core System (Table 2), and Extra budgetary funding (EXB) for Development of OBPS Core (Table 3).

Table 2: Budget proposed to Maintaining OBPS Core System

Timing of spend	**Milestones**	**OBPS BUDGET REQUESTED USD**		**2025 OBPS BUDGET USD FROM IOC PROGRAMME IODE**		**2025 OBPS BUDGET USD FROM IOC PROGRAMME GOOS**	
		Jan- June	July-Dec	Jan- June	July-Dec	Jan- June	July-Dec
Monthly	Project Manager	8,460	16,920	4,230	8,460	4,230	8,460
Monthly	AWS subscription	4,500	4,500	2,250	2,250	2,250	2,250
Jan-Dec 2025	Travel (Chair, PM, others)	4,500	4,500	2,250	2,250	2,250	2,250
Sep 2025	OBPS Annual Workshop	0	10,000	0	5,000	0	5,000
Nov 2025	SG-OBPS Annual Meeting	0	25,000	0	12,500	0	12,500
Jan-Dec 2025	Repository Certification (CTS 3 year sub)	0	4,000	0	2,000	0	2,000
Jan-Dec 2025	Promotional Material (video and flyers)	2,500	2,500	1,250	1,250	1,250	1,250
TOTAL - MAINTAINING OBPS CORE SYSTEM		**19,960**	**67,420**	**9,980**	**33,710**	**9,980**	**33,710**

Table 3: Extra budgetary funding (EXB) for Development of OBPS Core System

*TBD: To be define

DEVELOPMENT OF OBPS CORE SYSTEM (EXB)	USD
Autoingest of metadata (Journal) (based on a CrossRef sub)	4,000
Autoingest of metadata (Reports)	TBD
AI translation of endorsed practices - ongoing exercise as practices endorsed (need evidenced by downloads of translated versions)	TBD
Machine readable BP templates *(possibly link with Autoingest of metadata (Reports)*	?10,000
Implement a process for users to contact the creator to discuss the practice (non public email is maintained by the system)	TBD
Ocean Practices Federated Network (OPFN) OBPS collaboration and automated upload	TBD
Review request email automatically generated by the repository to remind practice creators when a review of a practice is due (after 5 years published) of a new version is available and include question of continuing tp include the practice in OBPS	TBD

The proposed budget has to be approved at the GOOS Annual meeting on the 18-19th of February, 2025 in Paris, and at IODE-28, on the 12-15th of March, 2025, in Colombia. It is noted that the second semester funding remains contingent on the adoption of OBPS in other IOC Programmes. It is recommended to assess the first semester, and present a plan for the next semester during the Steering Group monthly meeting in May 2025. The development of OBPS Core System needs to be funded from external project research grants.

11. ELECTION OF THE CO-CHAIRS 2025-2026

It was confirmed that Cristian Muños Mas and Rebecca Zitoun take over in this meeting the Co-Chair role from Rene Garello and George Petihakis, for a period of two years renewable for a period of another two years following the IOC operation guidelines.

It was reported that some members have left or will leave the Steering Group, for whom roles should be sought for. Cora Hoerstmann steps out leaving the role as lead on the Ambassadors Programme. Rachel Przeslawski, who co-manages the newsletter, website, and communications, is leaving in the first quarter of 2025. There are already ongoing conversations with Isa Elegbede, who would like to volunteer to help with the website doing regular updates and minor edits. Piere Luigi and Juliette Hermes left in October 2024.

The last Steering Group call issued in August 2024, did not yield any responses, and therefore ahead of the SG-OBPS-VI meeting, a list of potential candidates, were approached inviting them to join the Steering Group. From those contacted, the following have responded positively, and it has been agreed by the Steering Group to invite them formally, sending them a letter.

- Aletta Yniguez, from the University of Philippines, has biological expertise and leads a UN Ocean Decade Project on Philippine ocean observing and coastal resource management.

- Enrique Alvarez, based in Spain and working at Mercator, will bring expertise as a modeller.

- Gercende Courtois de Vicoise, from the University of Gran Canaria, has expertise in aquaculture.

- Jose Multinho, based in Saudi Arabia and working at VSPEC, expressed interest in supporting the communication and outreach activities, helping Virginie VDV.

- Utte Broener, based in Norway, at Sintef-ocean and Chair of Ocean Decade DITTO Program architecture working group, has biological expertise and can help with the activities in the OBPS 'Ocean Practices for the Decade' Coordination, as Rebecca Z. needs to step out of this role.

12. ADOPTION OF MEETING ACTIONS

A list of actions is compiled in this document: SG_OBPS_Action_List , and reviewed one by one, adding priorities (P1-P3), from higher priority to lower, WP and or the person responsible for the action.

13. DATE AND PLACE OF THE NEXT SG MEETING

It was discussed that the SG-OBPS-VII in 2025 could be held in October 2025, instead of November-December as usual. George P. suggested that the meeting could be in Heraklion, at HCRM, where no costs for the venue are foreseen. Similarly, Cristian suggested the University of Bergen, in Norway as another potential venue. Oostende, Belgium was also discussed, however since there is no cafeteria at the Innovocean campus, costs for meals would have to be covered, making this option more costly. The date and place of the next Steering Group meeting was not decided during the meeting, and a survey will be conducted among Steering Group members to consider everyone's preferences.

Action 13.1: To decide together with the SG where it will be the next SG meeting, date and place

14. CLOSING OF THE MEETING

Peter Pissierssens thanked the Co-Chairs Rene Garello and George Petihakis for their commitment and hard work the past two years, while Rene and George acknowledge all members of the Steering Group for the Ocean Best Practices System and their contributions to SG-OBPS-VI.

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ANNEX I: LIST OF PARTICIPANTS

IN-PERSON

Arno LAMBERT
IT Services Manager
UNESCO / IOC Project Office for IODE
InnovOcean Campus
Jacobsenstraat 1, 8400 Oostende, Belgium

Cristian MUNOZ MAS
Senioringeniør
Havforskningsinstituttet
Forskningsgruppe for Bærekraftig Utvikling
Strandgaten 196 Room 216
5004 Bergen, Norway

Dr Emma HESLOP
Programme Specialist
Intergovernmental Oceanographic
Commission of UNESCO,
7, place de Fontenoy75732 Paris cedex 07
France

Dr George PETIHAKIS (Co-Chair)
Research Director
Institute of Oceanography
Hellenic Centre for Marine Research, Crete
Main Building of HCMR, Former U.S. Base,
Gournes, P.O.Box 2214,
Heraklion, Greece

Dr Jay PEARLMAN
Director, Four Bridges
Port Angeles, WA 98362
United States of America

Dr Joanna POST
Director, Global Ocean Observing System
Intergovernmental Oceanographic
Commission of UNESCO,
7, place de Fontenoy75732 Paris cedex 07
France

Dr Katherina L. SCHOO
Ocean Science Section
Intergovernmental Oceanographic
Commission of UNESCO,
7, place de Fontenoy75732 Paris cedex 07
France

Justin BUCK
British Oceanographic Data Centre,
National Oceanography Centre
6 Brownlow Street, Liverpool. L3 5DA
United Kingdom

Patricia Martin Cabrera
OBPS Project Manager
IOC Ocean Best Practices System
Navas de Tolosa 1 23003 Jaén, Spain

Pauline SIMPSON
OBPS Repository Manager
IOC Ocean Best Practices System
IEEE France

Peter PISSIERSSENS
Head, UNESCO / IOC Project Office for IODE
InnovOcean Campus
Jacobsenstraat 1
8400 Oostende. Belgium

Prof Frank MULLER-KARGER
Institute for Marine Remote Sensing/IMaRS
College of Marine Science
University of South Florida
140 7th Ave. South St Petersburg, FL 33701
United States of America

Prof René GARELLO (Co-Chair)
Professor Emeritus
Institut Mines-Telecom Atlantique
Bretagne-Pays de la Loire,
Technopôle Brest-Iroise, CS 83818, 29238
Brest Cedex 3, France

Ms. Katarina Lotta Elisabeth FYRBERG
Folkborgsvägen 1
SE-601 76 Norrköping
Sweden

VIRTUAL

Dr Ana Carolina PERALTA BRICHTOVA
Institute for Marine Remote Sensing/IMaRS
College of Marine Science
University of South Florida
140 7th Ave. South St Petersburg,

Dr Ana Carolina MAZZUCO
IODE Training Coordinator
UNESCO / IOC Project Office for IODE
InnovOcean Campus – Jacobsenstraat 1 - 8400 Oostende – Belgium

Dr Johannes KARSTENSEN
Ocean Circulation & Climate Dynamics: Physical Oceanography
GEOMAR | Helmholtz Centre for Ocean Research Kiel
Duesternbrooker Weg 20, 24105 Kiel
Germany

Dr Rachel PRZESLAWSKI
Research Leader Marine Ecosystems Fisheries Research
NSW Department of Primary Industries | Fisheries,
4 Woollamia Rd | PO Box 89 | Huskisson | NSW 2540, Australia

Mr Henrik Oksfeldt ENEVOLDSEN
University of Copenhagen
Dept of Biology
Marine Biological Section Universitetsparken 4
2100 Copenhagen, Denmark

Dr Edem MAHU
University of Ghana
Accra. Ghana
Marine and Fisheries Sciences
P. O. Box LG 25, Legon

Dr Cora HORSTMANN
Mediterranean Institute of Oceanography (MIO)
Campus de Luminy Bâtiment Méditerranée
13288 Marseille Cedex 09, France

Dr Rebecca ZITOUN
Integrated Marine Observing System
University of Tasmania
Private Bag 110, Hobart, TAS 7001
Australia

Dr Virginie VAN DONGEN-VOGELS
Australian Institute of Marine Science (AIMS)
Oceanography & Shelf Processes
PMB3, Townsville MC QLD 4810, Australia

Prof. Dato. Dr. Aileen Tan Shau HWAI
Centre For Marine & Coastal Studies,
Universiti Sains Malaysia
11800 USM
PENANG
Malaysia

INVITED EXPERTS (Online)

Luccy Scott
Jacobsenstraat 1
InnovOcean Campus
8400 Oostende
Belgium

Sundar RANGANATHAN
Velachery-Tambaram Main Road,Narayanapuram, Palikaranai
Chennai 600 100
Tamil Nadu
India

ANNEX II: LIST OF IOC SUBCOMISSIONS AND PROGRAMMES

IOC Subcommissions

- IOC Sub-Commission for Africa and the Adjacent Island States IOCAFRICA
- IOC Sub-Commission for the Western Pacific WESTPAC
- IOC Sub-Commission for the Caribbean and Adjacent Regions IOCARIBE
- IOC Sub-Commission for the Central and Eastern Atlantic IOCEA

IOC Programmes

- **Global Ocean Observing System (GOOS)** An international programme that provides comprehensive observations and data about the ocean to support services such as weather forecasting, climate prediction, and monitoring of ocean health.
- **International Oceanographic Data and Information Exchange (IODE)** Facilitates the exchange of oceanographic data and information between participating member states to improve the management of marine resources and the environment, enhancing research and promoting the availability of quality-controlled ocean data.
- **Tsunami and Other Coastal Hazards Warning System** Develops and maintains regional tsunami warning and mitigation systems in the Pacific, Indian Ocean, Caribbean, and other regions to enhance preparedness and reduce risks associated with coastal hazards.
- **Capacity Development** Strengthens the abilities of member states, especially developing countries, to understand and manage ocean and coastal resources through education, training, technology transfer, and infrastructure development.
- **Ocean Science Programme** Supports and coordinates global ocean science initiatives, including research on climate change impacts, ocean carbon cycles, ecosystem dynamics, and biodiversity to inform policy and management decisions at national and international levels.
- **Marine Policy and Regional Coordination Section** Focuses on fostering multi-agency partnerships related to ocean and coastal matters, emphasizing the science-policy-society interface.

ANNEX III: SUMMARY OF MEETING ACTIONS

Action 3.1: OBPS to participate in the IODC-III: Third Ocean data conference/IODE28

Action 3.2: Develop a plan to better coordinate OBPS activities with other IOC programs and ODIs Steering Group.

Action 3.3: Co-Chairs to contact the regional sub-commissions to present OBPS and understand their needs for best practices.

Action 4.1: Include the Ocean Expert link of the Advisory Board group on the website.

Action 4.2: Newspiece with Advisory Board meeting outcomes for December NewsFlash.

Action 4.3: Analyze the successes and challenges of the OBPS ambassador program and decide on next steps.

Action 4.4: Analysis of the mention of the need of BP in Ocean Decade 2030 vision white papers to align OBPS strategies with DCC priorities, challenges, and the broader Ocean Decade strategy.

Action 4.5: Implement a communication strategy to better promote new endorsed practices within IOC maillist, Ocean Expert, partner mailing list, stakeholder.

Action 4.6: Enhance social media communications channels: Linkedin, youtube for OBPS activities. 2–3 additional members are needed to manage these more effectively.

Action 4.7: Discuss with Workshop committee, Co-Chairs and SG members, the future of the workshop format.

Action 4.8: Conduct a participant survey to gather feedback on key outcomes and overall experience.

Action 4.9: Complete a 3h university course on general best practices and applications [within 6 months].

Action 5.1: Design a new metrics report that links users country information to the number of institutions and or researchers per country (not population).

Action 5.2: Arno L to investigate the possibility to use OE as a login authority for contributors logging in to DSpace Repository

Action 5.3: Arno L to investigate the possibility to use OE-id to identify the authors (that do not have an ORCID)

Action 5.4: Arno L to request VLIZ to permit the ETT Contactors access to the server hosting the staging version of the Repository to implement the completed contract enhancements

Action 5.5: Patricia C to progress the IOC RFP to obtain the quote cost including upgrading DSpace and then agreement to place the contract

Action 6.1: Review of the Repository Content Guidelines to align with IOC mandate
Pauline S to replace the word 'Research' with 'Science' and 'Applications' with "Services'. Rename the document to Ocean Best Practices Repository Content Guidelines, ensure it aligns with the IOC mandate and remove non-exhaustive subject list. After the above text changes to the Guidelines it will be used for submission assessment

Action 6.2: To prepare template text to be included in the repository system reject process to use when informing submitters a document does not comply with the repository content guidelines (Pauline S)

Action 6.3: AI Testing for Document Validation
Investigate the use of AI tools (e.g., ChatGPT) to validate 10 documents against the Repository Criteria. It was noted that this could only be initiated once a sufficient dataset of criteria acceptable documents (1000+ documents) is available for training the AI.

Action 6.4: Pauline S to continue to organize the Repository Content Survey exercise

Action 6.5: Pauline S to publish the Ocean Best Practices Repository Content Guidelines available on the Repository interface; OBPS Website repository page; OceanExpert and AquaDocs and investigate whether appropriate for the IOC Manual & Guides series.

Action 6.6: Translation Demonstration and AI Investigation
Pauline S to continue to obtain translations of new and not yet translated endorsed Best Practices using DeepL (IODE) or other appropriate translation service. Any costs would need to be included in a budget request. Any record including machine translation upload will include the already standard machine translation disclaimer. For long-term solutions, she will explore AI tools (e.g., ChatGPT) for user on-demand translation of endorsed practices, subject to expert review where feasible.

Action 6.7: Good, Better, Best Practice Definitions**.** Jay P to adapt Mantovani's definitions of good, better, and best practices to ensure they are concise and suitable for OBPS use. Example: best practice (is considered an endorsed practice). Endorsement proves the superior result across many other best practices within a community.

Action 7.1: To formalize the process of SG membership. Prepare a Letter of Acceptance to serve on OBPS with conditions and responsibilities, and a letter to members leaving to acknowledge their contributions.

Action 7.2: Invite all IOC Programmes to participate in the SG-OBPS

Action 7.3: To prepare a pitch 2 page-document to present OBPS to the IOC programmes

Action 8.1: To form a task team to update the current OBPS Strategic Plan, road map and implementation plan (Finalise Revision of SWOT Analysis).

Action 9.1: Establish Agreement between IOC and AISBL using UNESCO standard agreement template. With annual annex for annual workplan

Action 9.2: Establish a methodology of the work between AISBL-OBPS on the involvement on external projects

Action 13.1: To decide together with the SG where it will be the next SG meeting, date and place

ANNEX IV: REVISION OF THE TOR OF IOC-OBPS

REVISION OF THE TERMS OF REFERENCE OF THE IOC OCEAN BEST PRACTICES SYSTEM (OBPS)

The Intergovernmental Oceanographic Commission,

Recalling Decision IOC-XXX/7.2.1 (III) on the Establishment of the IOC Ocean Best Practices System Project (OBPS);

Recalling further the restructuring of the structural elements of the IODE programme structure in programme components and programme activities by IODE-27 (2023) and the categorization of OBPS as an IODE programme activity,

Noting that the Ocean Best Practices System Repository (OBPS-R) of best practices will continue supporting all IOC programmes as well as contribute to the UN Decade of Ocean Science for Sustainable Development and UN Sustainable Development Goals by providing a permanent curated archive of best practices in ocean sciences;

Noting further that within the context of the OBPS a best practice is defined as a methodology that has repeatedly produced superior results relative to other methodologies with the same objective; to be fully elevated to a best practice, a promising method will have been adopted and employed by multiple organizations.

Noting further that best practices can be in many forms including standard operating procedures, manuals, etc.

Recognizing that:

(i) the dissemination and use of rigorously tested best practice methods related to the IOC mandate will facilitate activity within and across disciplinary boundaries of ocean science;
(ii) the experience gained by IODE and GOOS through the OBPS project: IODE has successfully established a permanent repository offering the scientific community a platform to publish their ocean-related best practices and find practices of others using innovative search and access technology, a peer review journal publishing outlet and community forum, and a training resource leveraging community capabilities; and GOOS has established an endorsement model whereby GOOS endorsed best practices for networks and Essential Ocean Variables can be identified within the community and in the OBPS-R.

(iii) best practices relevant for and across all IOC mandates will be essential for the implementation of the entire value chain, for interoperability along that value chain, and for the development of ocean products and services with high societal benefits;
(iv) involvement and cooperation in the further development of OBPS by all IOC programmes and regional sub-commissions will be essential to ensure the widest possible development and dissemination of best practices and involvement of multiple stakeholder communities.
(v) IOC and WMO have established close, efficient and effective collaboration in ocean best practices;

Decides to:
(i) transition the "IOC Ocean Best Practices System (OBPS) project" to the IOC Ocean Best Practices System under a federation of IOC programmes and sub-commissions with revised terms of reference as attached in Annex A of this Decision;
(ii) establish the IOC Steering Group for the Ocean Best Practices System (OBPS) with the terms of reference as attached in Annex B of this Decision;

Urges Member States to actively participate in the OBPS by submitting relevant community practices on ocean observation, data management, products and services, and by promoting the use of practices contained in the OBPS at the national, regional and global level.

Invites relevant stakeholders to contribute community practices and collaborate with the OBPS;

Annex A to Decision IOC-XXX.[xxx]
Terms of Reference of the IOC Ocean Best Practices System (OBPS)

Objectives
The objectives of OBPS are to:
(i) Foster innovation and excellence by engaging with relevant communities in a joint and coordinated effort towards producing, reviewing and sustaining relevant best practices and standards;;
(ii) Increase efficiency, reproducibility and interoperability of the value chain of IOC by providing the community with a unified, sustained and readily accessible interdisciplinary knowledge base of best practices;
(iii) Maintain and advance the OBPS Repository as a universal and accessible storage for IOC-relevant ocean related best practice and standards;

Annex B to Decision IOC-XXX.[xxx]
Terms of Reference of the IOC Steering Group for the
Ocean Best Practices System (SG-OBPS)

Objectives
The SG-OBPS will have the following Terms of Reference:
(i) Propose the vision, strategy, work plan and budget for the Ocean Best Practices System;
(ii) Advise on technical and user aspects

(iii) Report, as relevant, to the IOC Assembly, IOC programmes, IOC sub-commissions, and to other partners on the progress of the Ocean Best Practices System;
(iv) Provide guidance to the OBPS Manager and OBPS Repository Manager, and IODE IT Manager;
(v) Identify extra-budgetary funding sources to further develop the OBPS;
(vi) Advocate the OBPS as a preferred resource for best practices and standards within the IOC mandate;

Membership

The Steering Group will be composed, inter alia, of:

(i) Representatives from IOC Programmes and Regional Sub-Commissions;
(ii) OBPS Manager;
(iii) OBPS Repository Manager;
(iii) IODE IT Manager;
(iv) OBPS Co-Chairs and Past Co-Chairs;
(v) Invited Experts as relevant;
(vi) Representatives of partner organizations, projects or programmes;
(vii) Representatives of the IOC Secretariat.

The Steering Group will meet annually and will elect its (Co-)Chair(s) for a period of two years, renewable once.