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Oostende, 16 March 2021

English only

**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION**

(of UNESCO)

**Twenty-sixth Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXVI)   
online, 20-23 April 2021**

**IOC Ocean Best Practices System**

**Implementation Plan**

**2021 - 2023**

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# Introduction to Implementation Plan

In the Ocean Best Practices System (OBPS) 2021-2025 Strategy, the four Strategic Objectives and associated outcomes provide guidance on priorities for the development of a more user-focused, inclusive and technology-sophisticated Ocean Best Practices System.

Looking forward, the “Ocean Decade” envisions a transformative change not only in ocean observations and data stewardship, but also addressing societal needs, human impact and capacity development. These changes will impact the level and service across the value chain from observations to end use and increase the demands for best practices, standards and interoperability. From the Decade Implementation Plan Guidance Note for Applicants No. 1/2020: “*programmes responding to this call are encouraged to address interoperability and to develop and use best practices in their work. Further resources can be found at oceanbestpractices.org”.*

OBPS anticipates that there will also be an evolution in the creation of best practices through the introduction of practices for co-design and co-development. There will also be important changes in training and use of best practices beyond the traditional mentoring modalities, incorporating web services and adaptive training supporting local and regional capabilities.

This implementation plan addresses priority actions for the next three years (2021-2023) (UNESCO biennium 2020-2021 and 2022-2023) for advancing toward the objectives of the OBPS Strategic Plan[[1]](#footnote-1) (also provided below) and responding to Ocean Decade needs related to best practices as resources allow. The core operational areas of OBPS include the repository with advanced search technology, a peer review publication of Best Practices in *Frontiers in Marine Science,* support for training and capacity development, and an outreach and engagement programme with user/creator communities. These elements remain and the plan addresses both the evolution of these and the development of additional to support a broader mandate.

# From Strategic Objectives to Activities to Outcomes

The strategic OBPS objectives (OBPS Strategic Plan) define the longer term needs for the development and operation of an evolving system which fosters collaboration, consensus building and innovation by providing practices and standards across ocean sciences, engineering and applications for society.

Below we link Objectives, Outcomes, Activities and Deliverables within the timeframe of this Implementation Plan, although some deliverables particularly within Strategic Objective 4 (SO-04) are likely to go beyond 2023.  The Activities are technical advancement of the OBPS infrastructure, capacity development, and broader community engagement. These priorities have been defined through dialogue with the community of OBPS stakeholders in a series of annual workshops and other events. They are a priority subset that represent main lines of action across the many activities undertaken by the OBPS. While each of these support one or more of the strategic objectives, the activities and deliverables are listed below under the primary objectives. These will evolve with time and as this plan develops, an update to the Implementation Plan will be provided on a 2-year basis.

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| **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** |

**SO-01 Outcomes**

O1.1.  The OBPS is a trusted, certified, responsive and sustained  community resource.

O1.2.  The OBPS hosts best practices that are tailored to a broad spectrum of resource /

           capability environments.

O1.3.  OBPS has broad community participation and ownership in the development and

           operations of the System.

O1.4.  The OBPS provides functionality which allows use by traditional knowledge-holders

           and  communities with multiple ways of storing and transmitting practical knowhow.

**SO-01 Activities (A), Deliverables (D) and Completion**

|  |  |  |
| --- | --- | --- |
| **Activity SO-01** | **Deliverable SO-01** | **Completion**  Subject to Funding |
| **A1.1**.  Secure an ISO or other Repository Certification | **D1.1.1**.OBPS Repository Certification | 12/2022 |
| **A1.2.**- Continue efficient fit-for-purpose operations of the OBPS repository including user-required technology enhancements | **D.1.2.1** Operational online repository of ocean best practices available 24/7 | Ongoing |
| **A1.3**.  Create improved content browsing and discovery functions, decision tree, apps | **D1.3.1**. Implement a decision tree for improved browsing and BP selection | 12/2022 |
| **D1.3.2**. Assess the need, the market and cost for developing a mobile phone app. | 12/2023 |
| **A1.4**. Expand BP submission processes to include automated submission including review of document style and completeness. | **D1.4.1**. Implement a user-tested automated submission system | 12/2023 |
| **A1.5**. Enhance and expand machine-readable templates offered by the OBPS to cover  methodology types submitted | **D1.5.1.** Update existing BP document templates and generate new topics with community advice | Ongoing |

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| **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** |

**SO-02 Outcomes**

O2.1. Trusted protocols for creation, convergence and endorsement of best practices

O2.2. Interoperability across all dimensions of ocean stakeholders’ needs through

          propagation and linking of best practices, data and standards.

O2.3. Broad community engagement with the creation and adoption of best practices.

**SO-02 Activities (A), Deliverables (D) and Completion**

|  |  |  |
| --- | --- | --- |
| **Activity SO-02** | **Deliverable SO-02** | **Completion**  Subject to Funding |
| **A2.1**.  Provide guidance to communities on process for endorsing BP / develop rigorous OBPS criteria for acceptance | **D2.1.1.** Finalise endorsement first test case - GOOS | 06/2021 |
| **D2.1.2** Gain feedback on utility of approach and process | 11/2021 |
| **D2.1.3** Develop guidance document for endorsement process (first draft) and OBPS applications acceptance process | 09/2022 |
| **A2.2**.  Work with the community to identify areas of convergence and support champions in creating converged BPs | **D2.2.1.**  Document areas of convergence | Ongoing |
| **A2.3**. Expand enhanced search including semantic capabilities to accommodate broader range of disciplines, languages and cultures | **D2.3.1**. Semantic capabilities to accommodate broader range of disciplines | 6/2022 |
| **A2.4.**  Expanded communication plans to broaden engagement of ocean communities in creation and use of BP | **D2.4.1.**Advocacy products for community outreach and report on status of engagement (e.g., BP submitted from new communities) | Ongoing |
| **A2.5.** Host annual workshops | **D2.5.1**. Proceedings of OBPS Workshops, with recommendations to feed into future iterations of the IP | 2022, 2023, 2024 |
| **A2.6**. Increase contributions to the Frontiers in Marine Science: Research Topic Best Practices in Ocean Observation | **D2.6.1.** Report on the number of papers published. Highlight new additions in contributions? | Ongoing |

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| --- |
| **Strategic Objective 03:**  **To foster community - led and equitable capacity development in ocean best practices** |

**SO-03 Outcomes**

03.1.  Training resources provided by OTGA and other training providers available

through the OBPS repository

03.2.  Provision of a portfolio of courses on best practice development, consensus

building and submission created by the community for the community.

  03.3.  OBPS courses embedded in relevant university curricula and *Continuing*

*Professional Development (CPD)* opportunities.

**SO-03 Activities (A), Deliverables (D) and Completion**

|  |  |  |
| --- | --- | --- |
| **Activity SO-03** | **Deliverable SO-03** | **Completion**  Subject to Funding |
| **A3.1**. Expand the OBPS portfolio of courses available from the Repository on best practice  development and submission | **D3.1.1 Formal linkage with OTGA with** training course/s available on the OBPS. Case study: “How to create a best practice” | 12/2021 |
|  |
| **A3.2**  Support external training and capacity development activities | **D3.2.1** Four video courses on specific best practice development and submission. | 12/2022 |  |
| **A3.3** Engage formal and informal education institutions and sponsors to advance incorporation of best practices for ocean observing into education curricula | **D3.2.1** An engaged educational institution pilot | 12/2021 and Ongoing |  |

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| --- |
| **Strategic Objective 04:**  **To facilitate the creation of a federated network of interoperating ocean practices systems across all rights-holders and stakeholders** |

**SO-04 Outcomes**

04.1. A global collection of independent methodology management systems, seamlessly

interoperating with the OBPS, that will provide the technology needed to support a

cultural shift in how diverse ocean communities advance their practices

04.2 The OBPS continuously exchanges (meta)data with related methodology management

systems through ODIS[[2]](#footnote-2) and other digital infrastructures, federating queries across

partner systems, promoting access to best-practices methodology content hosted

elsewhere.

04.3. A process to identify, harness, and co-design cross-system technologies to detect

gaps and opportunities for convergence in distributed ocean methodology holdings.

**SO-04  Activities (A), Deliverables (D) and Completion**

|  |  |  |
| --- | --- | --- |
| **Activity SO-04** | **Deliverable SO-04** | **Completion**  Subject to Funding |
| **A4.1**.  Design a federation approach, to a global collection of independent methodology management systems | **D4.1.1**. Federated System Design | 12/2024 |
|
| **A4.2.**  Develop a pilot demonstration of a federated system  so that queries across partner systems enable access to best-practices methodology content hosted elsewhere | **D4.2.1**. A pilot demonstration of a federated system of Methodology Management  Systems | 12/2025 |
| **A4.3.**  A process to identify, harness, and co-design cross-system technologies to detect gaps and opportunities for convergence in distributed ocean methodology holdings | **D4.3.1.** Paper describing approaches to gap analyses | 12/2025 |

## OBPS Work Packages support to Strategic Objectives

The IOC Ocean Best Practices System is hosted at the UNESCO/IOC Project Office for IODE in Oostende, Belgium and is managed by a Steering Group (SG) representing major Stakeholders including: (i) representatives from IOC Programmes; (ii) invited experts from the full value chain of the ocean observing community; (iii) representatives of IODE and GOOS Secretariats.

The strategic objectives listed above will be implemented through the OBPS Work Package structure. Whilst the Work Packages titles may imply separate activity areas, they are not viewed as silos; interaction and support across all WPs has been and continues to be inherent in the OBPS implementation.

The following table indicates the primary Strategic Objective for each Work Package:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Work Package** | **SO1**  Trusted system through which the ocean community persistently archives | **SO2**  To accelerate the interoperability of observations, convergence of methods | **SO3**  Foster community-led and equitable capacity development | **SO4**  To facilitate the creation of a federated network |
| WP1  Project Management | Support | Support | Support | Support |
| WP2  Operations (Repository) | Primary | Support | Support | Support |
| WP3  Advanced Technologies and Interoperability | Support | Support | Support | Primary |
| WP4  Publications, Convergence, Endorsement | Support | Primary | Support | Support |
| WP5  Communication & Outreach | Support | Support | Support | Support |
| WP6  User Communities | Support | Primary | Support | Support |
| WP7  Capacity Development & Training | Support | Support | Primary | Support |

# Indicators of OBPS impact

Metrics will support and evidence the growing maturity and community engagement of the OBPS. Below are a selection:

|  |  |
| --- | --- |
| 01 | Number of content items contributed to the Repository |
| 02 | Usage of the OBPS  (e.g. volume of downloads, searches, users, contributors etc ) |
| 03 | Number of endorsed BPs |
| 04 | Number of papers published in *Frontiers in Marine Science, RT Best Practices in Ocean Observation* |
| 05 | Number of citations to the OBPS in authored peer reviewed articles |
| 06 | Number of participants to best practices webinars/workshops |
| 07 | Number of subscribers to the OBPS Monthly Newsletter |
| 08 | Number of available training courses through OTGA promoting the use of ocean best practices |

# Budget

The OBPS core operational funding is provided through the sponsorship of the IODE and GOOS Programmes under the IOC. Other developments are generally funded from sources external to the IOC

At this point, not all of the other activity developments have committed funding and it is acknowledged that some longer-term critical activity/deliverables are at risk without identified funding.  This is a challenge that needs to be addressed in collaboration with the OBPS partners and supporters.

See Budget Table below:

Note: the following figures are conditional on the level of UNESCO/IOC biennium funding.

**Table 1 - Budget Expenditure (Biennium 2020-2021 & 2022-2023)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RP  (**UNESCOI/OC regular programme funding  **Year →**  **Cost item ↓**  **External Funding (EXB) (**other than IOC funds)  **NDC = No Direct Cost for RP Budget (**in-kind  contribution or implemented by project staff) | **2021**  **RP**  **IODE** | **2021**  **IODE PO budget contribution** | **2021**  **RP**  **GOOS** | **2021**  **EXB REC’D** | **2021**  **EXB TO FIND** | **2022**  **RP**  **IODE** | **2022**  **IODE PO budget contribution** | **2022**  **RP**  **GOOS** | **2022**  **EXB REC’D** | **2022**  **EXB**  **TO FIND** |
| **WP1: Project Management** |  |  |  |  |  |  |  |  |  |  |
| * SG Meeting  (assuming F2F in 2022 in Oostende) |  |  |  |  |  |  | **6,000** |  |  |  |
| * Project Manager/Repository Manager   (EXB EuroSea and JERICO S3) and GOOS |  |  | **11,000** | **44,000** |  |  |  | **15,500** | **39,500** |  |
| * Workshop/Meeting travel (PM) |  |  |  |  |  |  |  |  | **3,500** |  |
| **WP2 (contributing to :**   * **SO-01: Trusted system through which  the ocean community persistently archives** |  |  |  |  |  |  |  |  |  |  |
| * **A1.1.** Secure an ISO or other Repository Certification |  | **1,500** |  |  |  |  | **1,000** |  |  |  |
| * **A1.2.** Continue fit-for-purpose operations of the OBPS repository including user-defined technology enhancements | **20,000** |  | **7,500** | **4,500\*** |  | **14,000** |  | **2,500** | **4,000** |  |
| * **A1.2**. AWS Recurring Expenses |  | **2,200** |  |  |  |  | **2,300** |  |  |  |
| * **A1.5.** Enhance and expand machine-readable templates offered by the OBPS to cover methodology types submitted | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
| * One time investment  AWS EDS 2021 Contract | **12,750** |  | **12,750** |  |  |  |  |  |  |  |
| **RP  (**UNESCOI/OC regular programme funding  **External Funding (EXB) (**other than IOC funds)  **NDC = No Direct Cost for RP Budget (**in-kind  contribution or implemented by project staff) | **2021**  **RP**  **IODE** | **2021**  **IODE Project Office budget contribution** | **2021**  **RP**  **GOOS** | **2021**  **EXB REC’D** | **2021**  **EXB TO FIND** | **2022**  **RP**  **IODE** | **2022**  **IODE Project Office budget contribution** | **2022**  **RP**  **GOOS** | **2022**  **EXB REC’D** | **2022**  **EXB**  **TO FIND** |
| **WP3 (contributing to:**   * **SO-02: To accelerate the interoperability of observations, convergence of methods.** * **SO-04 To facilitate the creation of a federated network)** |  |  |  |  |  |  |  |  |  |  |
| * **A1.3**.  Create improved content browsing and discovery functions decision tree, apps |  |  |  |  |  |  |  |  |  | **EXB**  (2023) |
| * **A1.4**. Expand BP submission processes to include automated submission including review of document style and completeness |  |  |  |  |  |  |  |  |  | **EXB**  (2023) |
| * **A2.3**. Expand enhanced search including semantic capabilities to accommodate broader range of disciplines, languages and cultures |  |  |  |  |  |  |  |  |  | **EXB** |
| * **A4.1**.  Design a federation approach, to a global collection of independent methodology management systems |  |  |  |  |  |  |  |  |  | **EXB**  (2024) |
| * **A4.2.**  Develop a pilot demonstration of a federated system  so that queries across partner systems enable access to best-practices methodology content hosted elsewhere |  |  |  |  |  |  |  |  |  | **EXB**  (2025) |
| * **A4.3.**  A process to identify, harness, and co-design cross-system technologies to detect gaps and opportunities for convergence in distributed ocean methodology holding |  |  |  |  |  |  |  |  |  | **EXB**  (2025) |
| **RP  (**UNESCOI/OC regular programme funding  **External Funding (EXB) (**other than IOC funds)  **NDC = No Direct Cost for RP Budget (**in-kind  contribution or implemented by project staff) | **2021**  **RP**  **IODE** | **2021**  **IODE Project Office budget contribution** | **2021**  **RP**  **GOOS** | **2021**  **EXB REC’D** | **2021**  **EXB TO FIND** | **2022**  **RP**  **IODE** | **2022**  **IODE Project Office budget contribution** | **2022**  **RP**  **GOOS** | **2022**  **EXB REC’D** | **2022**  **EXB**  **TO FIND** |
| **WP4 (contributing to: SO-02 Convergence and Endorsement)** |  |  |  |  |  |  |  |  |  |  |
| * **A2.1**.  Provide guidance to communities on process for endorsing BP / develop rigorous OBPS criteria for acceptance | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
| * **A2.2**.  Work with the community to identify areas of convergence and support champions in creating converged BPs | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
| * **A2.5.** Increase contributions to the Frontiers in Marine Science: Research Topic Best Practices in Ocean Observation | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
| **WP5 (contributing to: all )** |  |  |  |  |  |  |  |  |  |  |
| * **A2.4.** Host annual workshops (EXB rec’d EuroSea) |  |  |  | **6,000** | **EXB** |  |  |  | **2,000** | **EXB** |
| **WP6 (contributing to: SO2 Community Engagement +)** |  |  |  |  |  |  |  |  |  |  |
| * **A2.4.**  Expanded communication plans to broaden engagement of ocean communities in creation and use of BP |  | **3,000** |  |  |  |  | **3,000** |  |  |  |
| **WP7 (contributing to: SO-03 Foster community-led and equitable capacity development)** |  |  |  |  |  |  |  |  |  |  |
| * **A3.1.** Expand the OBPS portfolio of courses available from the Repository on best practice development and submission | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
| **RP  (**UNESCOI/OC regular programme funding  **External Funding (EXB) (**other than IOC funds)  **NDC = No Direct Cost for RP Budget (**in-kind  contribution or implemented by project staff) | **2021**  **RP**  **IODE** | **2021**  **IODE Project Office budget contribution** | **2021**  **RP**  **GOOS** | **2021**  **EXB REC’D** | **2021**  **EXB TO FIND** | **2022**  **RP**  **IODE** | **2022**  **IODE Project Office budget contribution** | **2022**  **RP**  **GOOS** | **2022**  **EXB REC’D** | **2022**  **EXB**  **TO FIND** |
| * **A3.2** Support external training and capacity development activities |  |  |  |  |  |  |  |  |  | **EXB** |
| * **A3.3** Engage formal and informal education institutions and sponsors to advance incorporation of best practices for ocean observing into education curricula | **NDC** |  | **NDC** |  |  | **NDC** |  | **NDC** |  |  |
|  | **2021**  **RP**  **IODE** | **2021**  **IODE Project Office budget contribution** | **2021**  **RP**  **GOOS** | **2021**  **EXB REC’D** | **2021**  **EXB TO FIND** | **2022**  **RP**  **IODE** | **2022**  **IODE Project Office budget contribution** | **2022**  **RP**  **GOOS** | **2022**  **EXB REC’D** | **2022**  **EXB TO FIND** |
| **TOTALS** | **32,750** | **6,700** | **30,750** | **54,500** | **EXB** | **14,000** | **12,300** | **18,000** | **49,000** | **EXB** |

\*transfer of travel money in EuroSea for use on technology support on the EuroSea Best Practice submissions to the OBPS Repository (requested.

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1. *IOC Ocean Best Practices System, Strategic Plan, 2021-2025.*

   Oostende, Belgium, UNESCO/IOC Project Office for IODE, 9pp. 2021. [↑](#footnote-ref-1)
2. ODIS (**IOC Ocean Data and Information System)** will interlink distributed, independent, systems (within and outside of the IOC) through a decentralized interoperability architecture (ODIS-Arch), to form a digital ecosystem [↑](#footnote-ref-2)