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IMOS FRAMEWORK FOR THE SUBMISSION OF PRACTICES TO THE OCEAN BEST PRACTICE SYSTEM

Generic Guidance for the IMOS Community

January 2025

Australia's Integrated Marine Observing System (IMOS) is enabled by the National Collaborative Research Infrastructure Strategy (NCRIS). It is operated by a consortium of institutions as an unincorporated joint venture, with the University of Tasmania as Lead Agent.

IMOS acknowledges the Traditional Custodians and Elders of the land and sea on which we work and observe, and recognise them as Australia's first marine scientists and carers of Sea Country. We pay our respects to Aboriginal and Torres Strait Islander peoples past and present.

Contents

1. Overview

The development and adoption of well-documented, standardized practices in ocean research, operations, and applications are fundamental to achieving global and regional interoperability across the value chain from requirement setting, through observations to data management and ultimately to the end user applications and societal impacts. By promoting data comparability and integration, these practices facilitate effective collaboration among scientists, stakeholders, and end-users, enable the synthesis of diverse datasets, and address complex science challenges with greater certainty. Additionally, these standardized practices enhance data quality, cultivate trust among stakeholders, facilitate capacity development, and foster a skilled workforce equipped to navigate the complexities of ocean science and data management. These comprehensive efforts are essential in supporting a resilient and sustainable future for our oceans.

The Integrated Marine Observing System (IMOS) collects and delivers sustained observations of Australia's marine estate. To achieve this vision, IMOS Facilities operate various sensor platforms specialised in observing targeted ocean or climate variables. Over time, IMOS Facilities have developed and improved numerous practices across the entire value chain of ocean observations. To ensure the dissemination, visibility, uptake, and archiving of these practices in an open and accessible manner, the IMOS Office deposits practices from its Facilities into the IMOS community repository of the Ocean Best Practices System (OBPS). This typically includes field operations protocols as well as data processing and quality-control reports.

However, within this framework, challenges arise regarding the maturity distinction between good, better, and best practices (BPs), as well as in discovering and identifying standards and practices endorsed by IMOS and recommended and adopted by the IMOS community. A definition of a BP can be found in **Annex A**. So, there is a clear need for IMOS to explain

- the process(es) employed to submit practices to the OBPS Repository,
- the maturity model used to identify the attributes which enable a practice to become a good, better, or best practice, and
- the criteria it uses to endorse practices.

This guide comprehensively addresses these points and further delineates the respective responsibilities of both the IMOS Office and the IMOS Facilities in this process. By establishing uniform adherence to guidelines and criteria for all IMOS-related practices and BPs, this streamlined approach ensures consistency and reliability across the IMOS community.

Moreover, this standardized process aids the IMOS community in generating transparent, traceable, comparable, and trusted data, information, and knowledge for both scientific endeavours and societal benefit. Establishing this foundation of transparency and trust is pivotal for effectively integrating data and data products into various stakeholder activities, including environmental management and policymaking efforts.

2. Ocean Best Practice System (OBPS) Repository

The Ocean Best Practices System (OBPS) repository is a permanent, online, open access document repository, which aims to provide a discovery point for research groups and stakeholders to search and find existing community ocean practices and BPs. The repository is

maintained by the International Oceanographic Data and information Exchange (IODE) of the UNESCO-IOC as an IOC (GOOS) co-ordinated activity.

The OBPS Vision is "*a future where there are agreed and broadly adopted methods across ocean research, operations, and applications*". The OBPS Mission is to sustain an evolving system which fosters collaboration, consensus building, and innovation by providing coordinated and global access to methods, practices, BPs, and standards across ocean sciences and applications.

IMOS supports the OBPS vision, contributing to the requirement for collaborative ocean observing to follow well-defined and reproducible methods and practices.

3. IMOS submission process to the OBPS Repository

A diverse range of ocean practices and methods can be deposited in the OBPS Repository, encompassing equipment user manuals, guides, software, book chapters, protocols, published papers, training courses, educational material (including videos), and standard operating procedures. These documents are designed to enhance the quality, consistency, and efficacy of data acquisition, analysis, management, and/or accessibility.

Each practice is submitted to the 'IMOS Community' OBPS Repository by the IMOS Office, along with the standard required metadata, which includes information detailing the maturity level of the practice (**Section 4**) and its endorsement status (**Section 5**). Submissions undergo a review process by an editor, and upon successful completion of the review, the practice is moved to the OBPS Repository within a turnaround time of less than 48 hours. Once uploaded, the practice is permanently and securely hosted in the open access repository, ensuring its accessibility to the wider community. Additionally, usage metrics for each practice can be tracked and viewed, providing valuable insights into its impact and relevance within the ocean observing community.

4. The Maturity Model

The maturity model (**Table A**), based on the criteria outlined by Mantovani et al., (2024), serves as a comprehensive framework for assessing both the maturity of the practice description and its implementation. This model is introduced here to offer clarity to the IMOS community regarding the attributes used for the maturity evaluation of a practice. The model provides practice developers with a framework for analysing gaps and suggesting actions for practice improvement, and evolution from good, to better, to best practices, and ensuring practice sustainability. Moreover, the model enables end-users to identify the maturity level of practices, empowering them to select the most suitable practice for adoption, which ensures consistent replication. It also fosters inter-institutional and international collaboration toward practice standardization. Overall, this maturity model facilitates a common approach for developing and accessing practices leading to enhanced interoperability and trust within the ocean observing community. It serves as a cornerstone for achieving greater alignment and cooperation, ultimately advancing our understanding and sustainable management of the world's oceans.

Table A. *The five levels of maturity for ocean practices and the attributes required to reach each level (Mantovani et al., 2024). It is important to note that this maturity model is a "living" concept, expected to evolve over time.*

Level	Maturity	Description of attributes to achieve the level
1	**Formation of Practice**	• Practice is *ad hoc* with little documentation.
2	**Emerging Practice** – Repeatable	• Practice is defined and may be documented. • Practice is repeatable by the practice creator.
3	**Good Practice** – Defined and Documented	• Practice is formally documented and supported by searchable metadata. • Practice documentation is openly available in a sustained repository with a DOI. • Practice documentation is sufficient for the practice to be replicated by practitioners with prior knowledge in similar practices. • Practice document formats and metadata conform at least to some existing guidelines. *Note: Attributes 1 and 2 are provided in the first place by IMOS, and then secondly through OBPS.*
4	**Better Practice** – Developed and Broadly Adopted	• Practice is recognized and actively used by multiple institutions but not necessarily formally endorsed. • Practice document describes either explicitly or implicitly how practitioners can verify their successful implementation of the practice. • Practice documentation is sufficient for the practice to be replicated by users without prior knowledge of similar practices. • Guidelines are available for evolution of practice and its documentation, such as updates or reviews, and also have procedures for user feedback. • Practice documentation has standardised formats and comprehensive metadata conforming to OBPS or other global standards. • Practice documents and metadata are machine-readable.
5	**Best Practice** - Mature	• Practice is reviewed and endorsed by a multi-institutional expert panel following OBPS/GOOS endorsement protocols. • Practice is adopted at least regionally. • Practice includes a process for quality assessment. • Practice has specific protocols for supporting improvements, including user feedback loops. • Implementation of practice has formal tool (such as checklists, software checkers, assessment procedure, etc.) to verify implementation. • Practice has materials for training (either described in the practice document or in a separate linked document(s)).

The IMOS Office will conduct a thorough review of each submitted practice based on the criteria outlined above. Please note that only practices rated at level 3-5 will be submitted to the OBPS Repository by the IMOS Office. For each qualifying practice, the IMOS Office will complete the relevant metadata sections in the OBPS Repository submission form. Authors of the practice can assist in this process by filling out the IMOS submission form, especially designed for documents of the IMOS Facilities. This collaborative approach ensures that all essential information is accurately captured, facilitates the seamless integration of practices into the OBPS Repository, and ensures that the maturity levels are included as part of the repository index.

5. IMOS Endorsement

IMOS is committed to providing its community with clear guidance on the practices it recommends and that are adopted by the IMOS community, promoting greater regional alignment across a wide range of application areas, including data collection, handling, management, storage, and generation of data products. This transparent and impartial endorsement process aims to identify trusted standards, methods, practices, and best practices (BPs) that have undergone rigorous community review and consensus-building. By adopting these endorsed practices, the IMOS community can enhance collaboration, efficiency, and excellence in ocean research and management.

To ensure consistency, reliability, and efficiency in the endorsement process of practices, OBPS (Bushnell & Pearlman, 2024; Hörstmann, et al, 2020) and the Global Ocean Observing System (GOOS) have outlined specific steps that authors must follow for their practices to qualify for endorsement. It is important to note that the globally relevant GOOS guidelines for endorsement (Hermes et al., 2020) will only be followed where applicable and suitable. For more details on this, please refer to **Annex B.**

To qualify for IMOS endorsement, at a minimum, a practice is expected to:

- have completed a rigorous and transparent community review process whereby comments are publicly invited, adjudicated, and actioned by the author(s) and where these actions have been independently assessed or are available on request;
- has been successfully used by multiple institutions;
- be approved by the leadership of the relevant network, expert team or institution;
- be shown as fit for the purposes it aims to fulfill;
- be available and identifiable within the OBPS Repository;
- be updated at relevant timeframes or have a maintenance plan for future updates;
- includes description of estimating uncertainty or heterogeneity of a quantity (if applicable); and
- follows recommendations for metadata standards and file formats for archiving in international data and information repositories.

A practice can only be labelled "*IMOS endorsed*" and uploaded as such to the OBPS Repository if all outlined requirements are met. The IMOS Office will conduct a thorough review of each submitted practice against the endorsement criteria. Subsequently, the IMOS Office will prepare the necessary endorsement documentation, including an endorsement recommendation letter for submission to OBPS. The endorsement will then be reviewed by a subcommittee of the OBPS Steering Group to ensure it conforms to the established criteria. Once the review is complete and

the endorsement is accepted, the practice's repository metadata will be updated to reflect the IMOS endorsement. The record will include the endorsed version of the document and its endorsement certificate. These endorsed documents will be searchable using "endorsed" as a search parameter within the OBPS Repository, and access statistics will be tracked for the endorsed materials. This approach ensures that IMOS-endorsed practices are visible, credible, and easily accessible within the ocean observing community.

6. Responsibility of IMOS Facilities

To facilitate the submission process, authors of practices are asked to provide the IMOS Office with the following:

- The practices must be submitted by the agreed deadline, unless otherwise discussed with the IMOS Office.
    - The IMOS Office has set-up a submission form to facilitate and streamline the submission of practices to the IMOS Office across IMOS Facilities: Click here to access the submission form.
    - Document templates for practices can be found in **Annex C**.
    - For submission, it is preferable to use the IMOS Title Page template for practice documents, unless it is a published paper or another Title Page template from the author's facility is being used. Click here to access the Title Page Template. If other Title Pages are used, it is essential to ensures that all necessary information is included, i.e., date, edition/version, author/s, author/s affiliation, citation, version control table, and creative commons license.
    - Authors are asked to refrain from using the term "Best Practice" in the title or subtitle of their practice unless the practice qualifies as such (see **ANNEX A and Section 4**). In addition, if the practice meets the criteria for being considered a BP, it will be highlighted as such in the metadata of the OBPS Repository.
    - It is important that the practice title describes the method focus and the type of practice. IMOS Facilities typically develop QC/QA operational manuals, data manuals, protocols, and guidelines, among other formats.
    - Acknowledgement of IMOS must be included in the document's acknowledgement statement (see **ANNEX D**).
- The submitted practices should contain comprehensive information on the calibration, sample collection, storage, processing and analysis, and QC/QA procedures for all variables collected and derived by the IMOS Facility. This approach ensures that the provided practice aligns with the FAIR data principles, promoting transparency in datasets and quality information.
    - Document templates for practices can be found in **Annex C**, or click here to access the Document Template Online.
- Supporting documentation validating the necessary maturity, adoption, and endorsement criteria. Please refer to the submission form for more details on this.
- A plan for updates and/or regular reviews of the practice to ensure it is up to date, accommodates methodological and procedural advancements, and addresses user community feedback. The frequency of updates/reviews may vary depending on the material under discussion, but the timeline must be communicated to the IMOS Office.

- Upon document updates, a summary detailing the changes between successive document version must be provided via the submission form and a version control table (**Annex E**) must be included in the practice documentation. The previous practice will then be marked as superseded or obsolete in the metadata depending on the nature of the update.

7. Responsibility of IMOS Office

The IMOS Office assumes the following responsibilities (**Figure A**):

- Reviewing the submitted practices against the adoption level, maturity level, and endorsement criteria.
- Assigning a DOI to the practice, if not already available, and providing the unique DOI identifier to the authors.
- Creating an AODN meta-data record.
- Hosting the practice document locally on the AODN and IMOS Facility webpages.
- Preparing submission and endorsement documentation for the OBPS Repository.
- Submitting the practices to OBPS for review.
- Updating existing practices in the OBPS Repository, including detail on version control.
- Maintaining a central record of when a practice has been uploaded and endorsed, identifying the responsible facility, and including lead author contact details. After 3-5 years, a reminder will be sent to authors to check for updates.
- Providing IMOS Facilities with OBPS-generated usage statistics.

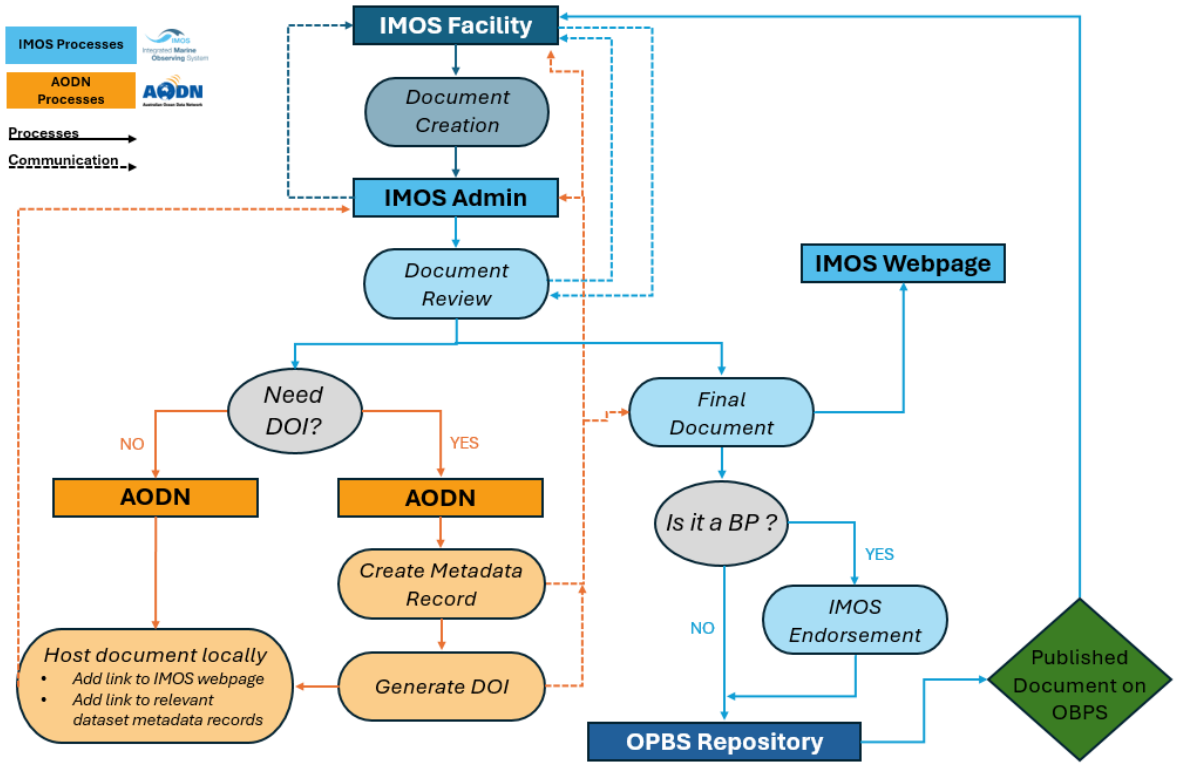

Figure.A. *Workflow for the submission of new documents to the OBPS Repository.*

8. References

Bushnell M. and Pearlman J. (eds) (2024) Ocean Best Practices System Endorsement: Guidance for the Ocean Community*, Version 2024-03-20. Ocean Best Practices System*, 8pp. DOI: https://doi.org/10.25607/OBP-1983

Hermes, J. (ed.) (2020) GOOS Best Practices Endorsement Process. Version 1. Paris, France, *Global Ocean Observing System*, 7pp. DOI: http://dx.doi.org/10.25607/OBP-926

Hörstmann C., Buttigieg P.L., Simpson P., Pearlman J., Karstensen J., and Waite, A.M. (2020) Towards a Best Practice for Developing Best Practices in Ocean Observation (BP4BP): Supporting Methodological Evolution through Actionable Documentation. Paris, France, UNESCO, 33pp. *Intergovernmental Oceanographic Commission Manuals and Guides No. 84.* (IOC/2020/MG/84). DOI: http://dx.doi.org/10.25607/OBP-781

Mantovani C., Pearlman J., Rubio A., Przeslawski R., Bushnell M., Simpson P., Corgnati L, Alvarez E, Cosoli S., Roarty H. (2024). An Ocean Practices Maturity Model: from Good to Best Practices. *Frontiers in Marine Science, 11, 1415374.* DOI: 10.3389/fmars.2024.1415374

Pearlman J., Bushnell M., Coppola L., Karstensen J., Buttigieg P. L., Pearlman F., et al. (2019). Evolving and sustaining ocean best practices and standards for the next decade. *Frontiers in Marine Science* 6. DOI: 10.3389/fmars.2019.00277

Przeslawski R., Barrett N., Carroll A., Foster S., Gibbons B., Jordan A., Monk J., Langlois T.J., Lara-Lopez A., Pearlman J, Picard K., Pini-Fitzsimmons J., van Ruth P.D., Williams J. (2023) Developing an ocean best practice: a case study of marine sampling practices from Australia. *Frontiers in Marine Science* 10: 641. DOI: https://doi.org/10.3389/fmars.2023.1173075

Simpson P., Pearlman F., and Pearlman J. (eds) (2019) *Evolving and Sustaining Ocean Best Practices Workshop II, 04– 06 December 2018, Intergovernmental Oceanographic Commission, Paris, France: Proceedings*. Oostende, Belgium, UNESCO/IOC/IODE for the AtlantOS/ODIP/OORCN Ocean Best Practices Working Group, 35pp. DOI: http://dx.doi.org/10.25607/OBP-436

9. ANNEX

9.1. Annex A – Definition of Best Practices (BP)

A Best Practice is 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 needs to be adopted and employed by multiple organizations*" (Simpson et al., 2019; Pearlman et al., 2019).

9.2. Annex B – Alignment of IMOS practices with GOOS endorsement guidelines

As one of thirteen partners of the GOOS Regional Alliances, IMOS is committed to aligning its internal endorsement process with the global GOOS-endorsement guidelines, where applicable and suitable, to ensure consistency between the two processes.

Outlined below (**Table B**) are the GOOS endorsement criteria, which authors must adhere to for their practices to qualify as "*GOOS endorsed*". Each criteria contains an assessment of its relevance for IMOS and a brief analysis of the alignment between IMOS practices and the GOOS endorsement framework.

Table.B¡ *GOOS endorsement criteria for ocean practices*.

Criteria	Relevance for IMOS
a) have completed a rigorous community review process whereby comments are publicly invited, adjudicated, and actioned by the author.	In IMOS, our scientific community liaises through rigorous expert steering committees, facilitating an open forum for a comprehensive review process for all proposed practices. Additionally, most of our practices are published in scientific journals, which ensures they have undergone a peer-reviewed process. They may appear either as standalone papers or as part of the methods and/or supplementary materials.
b) originate from a network that is at least "pilot'' in all the BioEco or OCG network attributes (when applicable, i.e. originating from a BioEco or OCG network);	IMOS participates as one of the monitoring programs listed on the BioEco Metadata Portal. We are also actively engaged in several OCG Networks, such as AniBOS and Argo, thereby, generally meeting the network attribute requirements for the BioEco and OCG networks, respectively.
c) be approved by the leadership of the relevant network, expert team or other community leaders.	As mentioned in **a)**, IMOS practices receive approval from relevant leadership bodies, expert teams, or other leaders from our scientific community who are globally recognised as experts in their field.
d) is fit for the purpose as defined and fully satisfies the definition of a BP on the OBPS.	At IMOS, we wholeheartedly adhere to the understanding that a practice is a methodology that consistently demonstrates superior performance compared to other methodologies with the same objectives. We understand that to

	fully achieve a status of a BP, the methods used should be employed by multiple organizations, which is true for most of the scientific facilities we fund. IMOS BPs are developed according to the process outlined in Przeslawski et al. (2023).
e) has been recognised as such through the relevant GOOS body, e.g. GOOS BioEco panel, BGC panel, OOPC or OCG or ETOOFS, after the approval of the relevant network leadership	While we acknowledge the importance of recognition through GOOS and its relevant bodies and panels, IMOS has critical ongoing operations that cannot wait for GOOS endorsement. IMOS is satisfied it has both the international credibility and the robustness in operations that ensure our protocols qualify as Global Best Practices, thereby laying the foundation for IMOS to act as their own endorsing entity. We will continue to take the initiative to enhance our practices, and prioritize their effectiveness and relevance to the scientific community and oceanographic research.
f) Is available and identifiable within the OBPS repository or will be submitted as soon as endorsement is received.	In alignment with the guidelines, the 'IMOS Community' repository on the OBPS platform already contains a substantial collection of practices. Our repository includes various documents such as reports, protocols, calibration guidelines, processing guidelines, manuals, and more. These resources are readily accessible and identifiable, contributing to the broader dissemination and adoption of these practices.
g) is updated ate relevant timeframes.	IMOS Facility documents are updated at a minimum with each new funding round, or more frequently if the research community involved in the program identifies a need.

9.3. Annex C – Document Templates

These templates are amended from those made available by the Ocean Best Practices System (OBPS). These templates provide a suggested structure and content for the creation of practice documents across various domains including sensors, instruments, platforms, mooring types, ocean applications, modelling, data management etc. While the templates are comprehensive, not all suggested content will be relevant to every document. Therefore, authors are encouraged to use these templates as flexible guidelines rather than strict requirements.

The following templates are available:

a) Sensors
b) Ocean applications
c) Ocean modelling
d) Data management

A) SENSOR - PRACTICE DOCUMENT TEMPLATE

TABLE OF CONTENTS

Practices may be documented in the form of standard operating procedures or manuals or other formats. The list below shows suggested sections and not all of these may be occurring in the document. Additional topic titles should be added to the table of contents in the appropriate section, inserting sequential page numbers.

1.0 EXECUTIVE SUMMARY/ABSTRACT

Free text 250 words maximum. Please provide a summary of your practice including, as appropriate, a brief description of what techniques your practice is about, which ocean environments or regions it targets, … type of data/measurements/observing platform it covers, limits to its applicability and note the community of practice that developed the practice.

2.0 INTRODUCTION *(include scope of document and target audience)*

3.0 INSTRUMENT AND PLATFORM

- Sensor (include make, model, serial number (if appropriate), information on instrument, maintenance protocols and logs of maintenance carried out).
- Purpose (identified need)
- Design Overview (provide manufacturer reference document if appropriate)
- Detailed Design (include configurations, protocols for setting the manufacturer-provided parameters)
- Deployment (what, where, how, and when (brief summary and then linking to website)
- Platforms integration into the platform's operational consideration for the platform
- Methods for data collection
- Functionality
- Analysis
- Calibration
- Uncertainties in observations
- Standards used
- Quality Assessment methods
- Data Management/Data Delivery (including formats)
- Organizations with Current Operational Implementations
- Issues (drawbacks, vulnerabilities etc)
- Training Materials and Contacts (include resource links)
- Contributing Practices

4.0 CONCLUSION

5.0 ANNEXES

- List of Figures
- Glossary
- Acronyms
- References (include DOIs)

B) OCEAN APPLICATION - PRACTICE DOCUMENT TEMPLATE

TABLE OF CONTENTS

Practices may be documented in the form of standard operating procedures or manuals or other formats. The list below shows suggested sections and not all of these may be occurring in

the document. Additional topic titles should be added to the table of contents in the appropriate section, inserting sequential numbers.

1.0 EXECUTIVE SUMMARY/ABSTRACT
Free text 250 words maximum. Please provide a summary of your practice including, as appropriate, a brief description of what techniques your best practice is about, which ocean environments or regions it targets, … type of data/measurements/observing platform it covers, limits to its applicability and note the community of practice that developed the practice.

2.0 INTRODUCTION (*include scope of document and target audience)*

3.0 OCEAN APPLICATIONS
- Issue being addressed
- Product of Practice
- Practice Description
    - Output (product) type and description (including specific formats)
    - Steps for Implementation
    - Data Required
    - Tools, models or software used
    - International Standards used
    - Quality Control
    - Implementation challenges or issues
    - Visualization Tools
    - User Feedback Mechanisms

4.0 CONCLUSIONS

5.0 ANNEXES
- List of Figures
- Glossary
- Acronyms
- References (include DOIs)

C) OCEAN MODELLING - PRACTICE DOCUMENT TEMPLATE

TABLE OF CONTENTS
Practices may be documented in the form of standard operating procedures or manuals or other formats. The list below shows suggested sections and not all of these may be occurring in the document. Additional topic titles should be added to the table of contents in the appropriate section, inserting sequential numbers.

1.0 EXECUTIVE SUMMARY/ABSTRACT
Free text 250 words maximum. Please provide a summary of your best practice including, as appropriate, a brief description of what techniques your best practice is about, which ocean environments or regions it targets, … type of data/measurements/observing platform it covers, limits to its applicability and note the community of practice that developed the practice.

2.0 INTRODUCTION *(include scope of document and target audience)*

3.0 OCEAN MODEL

- Model selection/name
- Practice Description
    - Pre-Requisites
    - Tools, models hardware or software used
    - International Standards or Best Practices used
    - Output (product) type and description (including specific formats, variables measured, data store…)
    - Quality Control
        - Potential error sources
        - Implementation challenges or issues
        - Replicability

4.0 CONCLUSIONS

5.0 ANNEXES
- List of Figures
- Glossary
- Acronyms
- References (include DOIs)

D) DATA MANAGEMENT PRACTICE DOCUMENT TEMPLATE

TABLE OF CONTENTS
Practices may be documented in the form of standard operating procedures or manuals or other formats. The list below shows suggested sections and not all of these may be occurring in the document. Additional topic titles should be added to the table of contents in the appropriate section, inserting sequential page numbers.

1.0 EXECUTIVE SUMMARY/ABSTRACT
Free text 250 words maximum. Please provide a summary of your best practice including, as appropriate, a brief description of what techniques your best practice is about, which ocean environments or regions it targets, … type of data/measurements/observing platform it covers, limits to its applicability and note the community of practice that developed the practice.

2.0 INTRODUCTION (*include scope of document and target audience)*

3.0 DATA MANAGEMENT (for the organization creating the Practice)
- Observation Parameter (e.g. sea surface temperature)
- Observation Instrument (e.g. discrete water sampler)
- Collection Details (link to reference document(s) if available; short Instrument description and conditions (if available)
- Data Format(s)
- Code Management (upload or link to DMP of organization with data policy)
- Interoperability Approach/Implementation
- Data Standards used in data management
- Metadata (schema, data flag info, etc)
- Quality Assessment & Control
- Archive Arrangements (trusted repository details, Data curation)

- Documentation Management (with names and or links to instrument manuals, calibration sheets …)
- Access and use (data distribution, web service, data citations with PID)
- Visualization Tools
- Data Management Issues

4.0 CONCLUSIONS

5.0 ANNEXES
- List of Figures
- Glossary
- Acronyms
- References (include DOIs)

9.4. Annex D – Acknowledgement of IMOS

Use of IMOS data must be clearly acknowledged by including the following statement in the acknowledgement text:

Long statement: Data were sourced from Australia's Integrated Marine Observing System (IMOS) – IMOS is enabled by the National Collaborative Research Infrastructure Strategy (NCRIS). It is operated by a consortium of institutions as an unincorporated joint venture, with the University of Tasmania as Lead Agent.

Short version, which can be used in a publication where space is limited: Data were sourced from Australia's Integrated Marine Observing System (IMOS) – IMOS is enabled by the National Collaborative Research Infrastructure Strategy (NCRIS).

9.5. Annex E – Version Control Information

If the practice document has been revised, a revision history must be provided through the submission from, and a version control table (**Table C**) has to be included in the practice documentation.

Table.C¡ *Version control information. Please order your revisions such that the earliest is at the bottom of the table.*

Revision/Update	Date	Comments	Author
We recommend using semantic versioning (e.g. 4.2.1)	(dd-mm-yyyy) or (mm-yyyy)	A very brief description of the changes/updates made. Comments for version 1.0 should be noted as "creation of document".	Last name(s), first name(s)