

Implementation of a new global MSDI layer dedicated to Marine Protected Areas (MPA)

Proposal for discussion of the situation and follow up activities

Submitted by:	IHO Secretariat
Executive Summary:	The creation of a new global thematic MSDI layer dedicated to Marine Protected Areas (MPAs) is in line with the decisions of the 3 rd Session of IHO Assembly. It intends to support the sustainable use and protection of MPAs. Such a layer will enable compatible GIS systems to monitor the progress towards the goal of protecting 30% of the Ocean, in accordance with the Agreement on the Protection of Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ), recently approved by the Intergovernmental Conference at the United Nations in March 2023. The layer will also serve as a trusted and recognized source of information to populate the S-122 – MPA product for navigation compatible with future S-100 ECDIS,
Related document:	Action C6/53 Decision A3/08c Decision IRCC15/31

References

- A. Agreement on the Protection of Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ)
- B. Global Ocean Alliance: 30by30 initiative (<https://www.gov.uk/government/topical-events/global-ocean-alliance-30by30-initiative/about>)
- C. A-3 Proposal 1.3 – Implementation and review of the IHO Strategic Plan
- D. IHO S-100 Implementation Strategy – Version 2.1 November 2022 (<https://iho.int/en/s-100-implementation-strategy>)
- E. C-17 - Spatial Data Infrastructures: “The Marine Dimension” - Guidance for Hydrographic Offices, Edition 3.0.0, May 2023 (under approval IHO CL xx/2023)

Introduction/Background

1. The ocean includes highly diverse ecosystems that sustain a healthy planet and provide a wide range of services to human societies. However, stressors like illegal, unreported and unregulated fishing (IUU), climate change, and pollution threaten the health of the oceans and the people who depend on them.
2. The obligation of international cooperation is furthermore strengthened through the Implementing Agreement of UNCLOS on Biodiversity Beyond National Jurisdiction (BBNJ) in Reference A. This Agreement requires Parties to cooperate for the conservation and sustainable use of marine biological diversity in areas beyond

national jurisdiction, including through strengthening and enhancing cooperation with and promoting cooperation among relevant legal instruments and frameworks and relevant global, regional, sub-regional and sectorial bodies, therefore, including with IHO.

3. As one of a suite of measures to protect and sustainably manage ocean resources, evidence shows that Marine Protected Areas (MPAs) can improve ocean health. MPAs help preserve biodiversity, boost fisheries productivity, support nature-based tourism and recreation, sequester carbon, protect coasts from storms, and mitigate some of the other negative impacts of climate change. Global momentum for establishing MPAs is increasing. *The effectiveness of these MPAs is highly dependent on their design and management.* The best available science concludes that conservation benefits are maximized by establishing strongly protected areas in a range of representative ecosystems.
4. The Global Ocean Alliance (GOA) in Reference B supports the target to protect at least 30% of the global ocean in MPAs and Other Effective area-based Conservation Measures (OECMs) by 2030. This is known as the “30by30 target”. MPAs and OECMs would provide a higher level of protection than currently exists and allow both the marine environment and sustainable marine economies to thrive.
5. With Reference C, it was reaffirmed by the 3rd Session of the IHO Assembly that an important means for creation and maintenance of services for S-100 derivative services is a matured MSDI infrastructure. The implementation of this target is addressed under the Working Programme of the MSDI Working Group which is overseen by IRCC. The anticipated solution so far was to build up a dedicated IHO web page which serves as a gateway to the respective national MSDI infrastructure of Member States. This concept has turned out in the interim to be an unbearable task in terms of completeness and maintenance. With Action C6/53, the IHO Council has therefore agreed on refocusing the function and the layout of a future MSDI portal on global thematic layers of information which are limited to the IHO scope such as those which are already provided under IHO online catalogues.
6. The objective of this paper is to identify a potential process to implement the creation and presentation of a specific global layer dedicated to MPAs, which can be used by the international community to monitor the progress to implement Marine Protected Areas globally, available as part of the IHO's MSDI and displayable for instance using INTToGIS and existing IHO GIS infrastructure. The MPAs specific global data layer may also be used in the future as a trusted and recognized source of information to populate the S-122 – MPA product for navigation, Edition 2.0.0 of which is due late 2025, according to the S-100 Implementation Strategy in Reference D.

Analysis/Discussion

7. Following Decisions A3/8 and IRCC15/31, the MSDIWG is limited by the existing layers within the IHO GIS, but in accordance with the Proposal 1.3 to the 3rd IHO Assembly in Reference C, and if new layers are identified, they should be submitted to IRCC to be endorsed and approved by the Council. In this regard, the MSDIWG is focused on identifying relevant and simple global thematic layers that will effectively contribute to the Strategic Goal 2 - Increasing the use of hydrographic data for the benefit of society,

and provide these data via existing platforms like INToGIS in the most efficient way without duplication of resources. The MSDIWG has reviewed the IHO Publication C-17 in Reference E, to be aligned to the IHO Strategic Plan 2021 - 2026, and to address, amongst others, – many of the environmental challenges, climate change and sustainable development.

8. In consideration of the high attention of the International Community on the Ocean and the recent global initiatives like the UN Decade of Ocean Science for Sustainable Developments and the signature of the Implementing Agreement in Reference A, one of the new MSDI layers matching the challenges that the MSDIWG is facing at paragraph 7, is displaying Marine Protected Areas.
9. ENC-producing IHO Member States often serve as the authoritative source of the marine geospatial information provided in the navigation products and services that they officially produce. Specifically, the geo-data and metadata related to the Marine Protected Areas are often already collected in the official S-57 ENCs and predominantly distributed by the RENCs. They will be also identified in S-101 ENCs. Most of them, if not all, are already encoded in ENCs. Similar to other information already used by the IHO Secretariat for measuring Strategic Performance Indicators (SPI) related to the Goals and Targets of the IHO Strategic Plan 2021-2026 (i.e. CATZOC values), this means that it is theoretically possible to extract their limits directly from the ENCs and display them worldwide, as a potential authoritative (IHO) source of information, but only if IHO Member States agree to this. Exploring the MPA data available in S-57 ENCs and Member States' willingness to share it can serve as an initial step for MPA layer implementation. Global coverage can be further enhanced in collaboration with a recognized global resource for MPA information maintained by for example protectedseas.net, mpatlas.org or another suitable partner. It is suggested that MSDIWG investigates who the possible partners might be and assists the Secretariat to establish means of collaboration and data sharing.
10. The IHO Secretariat, supported by the Republic of Korea, has the competence to manage the INToGIS system and it is in the process to move towards the INToGIS III version, which will consider the integration of S-100, including MPA related thematic content.
11. This initiative aims to establish the technical and procedural basis for wider use and provision of S-122 data services addressing the need of such S-100 compatible GIS systems including but not limited to S-100 ECDIS. Once S-122 is operational, (Edition 2.0.0 is planned in late 2025), the use of S-122 as a standard to be used beyond the IHO community for managing and displaying MPAs information should be promoted as a next step.

Recommendations

12. Promoting the availability and accessibility of – ideally S-100 compatible - datasets dedicated to MPAs is in accordance with the decisions taken by the various bodies of the IHO up to and including the Assembly, and responds not only to the demands of the Hydrographic Community, but to those of the entire international maritime community, particularly interested in the health of the oceans and their sustainable development.

13. It may be possible to use the geo-information already available in the official ENCs and establish a direct link with the RENCs and other data producers for the collection of the MPAs geographical information, assuming the required sharing policies are in place. The MSDIWG is invited to provide recommendations and a proposed course of action for the IHO to implement the MPA data layer, including a possible collaboration with protectedseas.net, mpatlas.org or another suitable partner and assists the Secretariat to establish means of collaboration and data sharing, and presentation on the INTToGIS.
14. On a wider horizon, and once S-122 is operational, (Edition 2.0.0 is planned in late 2025), the use of S-122 as a standard to be used beyond the IHO community for managing and displaying MPAs information can be promoted based on the established practices to gather the relevant information and organize the encoding as a global specific layer.

Justification and Impacts

15. In order to implement the above recommendations, it is necessary to establish the following procedure:
 - A. To approve MPAs layer as a potential new IHO MSDI specific global layer,
 - B. To assign MSDIWG the task of providing recommendations and a proposed course of action to implement the MPA specific global data layer,
 - C. To engage the IHO Member States directly or via the RENCs to authorize the RENCs for the provision of MPAs' geo-information for the building of the MPAs' specific global data layer and the RENCs to consider this new task (provision to the Secretariat on an annual basis) in their programme of work if agreed by their Governing Boards,
 - D. To engage with additional authoritative data sources of MPAs, to first develop a relationship and then create mechanisms for data sharing and exchange and potentially display on the INTToGIS.
 - E. To assist the Secretariat to facilitate a new MPAs' layer to display in the INTToGIS,
 - F. To investigate if the new layer could be used for HOs for populating S-122 products when edition 2.0.0 is available and dataflows are clarified by the interested HOs, RHCs and future collaborating partner.
16. The Council may agree on the steps at point 15 and task the IHO bodies accordingly.
17. The impact in terms of extra work for the IHO Secretariat staff needs to be considered in facilitating the disclosure of MPAs' geo-data via the interested HO`s, RENCs and collaborating partners for the construction of the new MPAs' layer to be displayed in INTToGIS.

Action Required of the Council

18. The Council is invited to:
 - Take note of the paper,

- Task the IHO Secretariat to engage with the RENCs and Member States for the provision of the MPAs geo-information,
- Task the MSDIWG via the IRCC to provide recommendations and a proposed course of action from a MSDI approach on how the IHO might go about providing a global MPA global specific data layer to be initially displayed under the IHO online Catalogues' web-page and then as part of the INTogIS,
- Invite HSSC and IRCC to cooperate via the respective WGs (NIPWG and MSDIWG) for the finalization of S-122 Edition 2.0.0 and the following population of S-122 products using the MPAs' data,
- Task the IHO Secretariat to establish liaison with relevant authoritative data sources of MPAs once the process of investigation was undertaken by the MSDIWG.