Report on the intersessional work on the assessment of mining technologies

After informal consultations online with a number of interested delegations and observers between the Council session in March and July 2024, a non-paper (Annex II) on the development and use of standards, such as those developed by the International Organization for Standardization (ISO), for mining technologies was developed and shared with interested parties.[1] Standardization refers to the development of private standards with the involvement of all parties concerned. The ISO is an example whose international standards (ISO standards) represent a consensus of participating entities on a solution to a particular issue.

The non-paper described a proposal for further work, to stimulate progress on the council decision (ISBA/23/C/18) in which the LTC was asked to consider a paper submitted to the ISA by the Kingdom of the Netherlands (ISBA/23/C/5), titled "Development of environmentally responsible mining technologies: towards an approval process for mining equipment" in the context of its work on draft regulations. This non-paper (Annex II) proposed to take the work forward towards implementation by 1) exploring which existing ISO standards might be relevant for deep-sea mining and 2) to develop an assessment and approval methodology for equipment, operational procedures and processes used in deep-sea mining exploitation. A number of steps needed to reach these goals were outlined in the non-paper.

To enable further dissemination and discussion of this non-paper to a wider audience, an informal lunch session, open to all ISA Member States and observers, took place at the ISA in Kingston, during the July 2024 session. The session was well attended, and several questions related to the topic were discussed. Many delegations supported the proposal that the work of the ISO could be beneficial to the ISA, and that research should undertaken on which relevant ISO standards already exist that may be relevant to the ISA regulations. Furthermore, there was consensus in the room that options for collaboration between the ISA and the ISO was worth exploring further, particularly where there may be a need to develop new ISO standards.

One of the next tasks, as outlined in the objectives of the non-paper, was to gather more information on the type of work the ISO undertakes in the field of deep-sea technologies and any other relevant subject field. In addition, the Kingdom of the Netherlands and Ireland wanted to explore the mechanism by which the ISA and the ISO could collaborate, and how this could lead to the development of new standards, where appropriate.

The Kingdom of the Netherlands and Ireland met with the ISO Technical Programme Manager of ISO/TC 8[2] in November 2024. The ISO Technical Committee 8 (TC8) relates to ships and marine technology and works on the standardization of design, construction, equipment, methods and technology and marine environmental matters for ship related and offshore activities in the sea. At present TC8 does not cover seabed mining explicitly. There is however, a mechanism within ISO to update the scope of the ISO committees including TC8 to include other topics, such as deep-sea mining based on evolving needs. Such an update of the scope of committees is normal practice.

Each theme has a subcommittee under which standards are developed e.g. Marine Technology (ISO/TC8/SC13) which develops standardisation of test methods, operation, design, construction and

[1] The purpose of integrating international standards for equipment and processes within the ISA regulations is twofold. First, to make use of any existing and relevant standards to ensure that approved and tested methodologies are used. This will also aid the LTC in evaluating any potential Plan of Work and will aid the enforcement body in ensuring compliance. Secondly, to identify where developments of new standards may be necessary to ensure environmental regulations are met (including thresholds and ISA standards) and through the development of these standards, to ensure that the best available techniques and best environmental practices are being used, as is common in environmental practice worldwide.

[2] https://www.iso.org/committee/45776.html

logistics of equipment, systems, infrastructure and technology used for observation, exploitation and protection of the ocean and sea areas.

The ISO Technical Programme Manager informed about the option for the ISA to become a liaison at the ISO. More information about this is provided below and in the Annex I. For example, the IMO is a liaison at the ISO for TC8. It can help the ISO to develop standards in collaboration with international bodies like the IMO. In the case of TC8, the IMO puts forward regulatory frameworks and tools, and requests help from the ISO on implementation. A federation of more than 170 national standards bodies participate in various expert groups to develop the standards. Experts are nominated from the national standardization bodies and meet (usually online) to agree on and develop the standards. On average, it takes 2-3 years to develop a standard, which is then adopted by the national standardization bodies.

There are several options to strengthen the collaboration between the ISO and the ISA. In the Annex I to this paper, these options are explained in more detail. Here a summary is provided.

1. **The granting of an observer status within the ISA to the ISO.** In accordance with rule 82 of the Rules of Procedure of the Assembly and the Guidelines for observer status of non-governmental organizations with ISA (Annex, ISBA/25/A/16) the ISO could be granted an observer status with the ISA. This would mean that the ISO may designate a representative to participate, without the right to vote, in the deliberations of the Council on questions affecting them or within the scope of their activities.
2. **The ISA can become a liaison at the ISO.** There are several categories of liaison with the ISO. As a category A liaison, the ISA can participate in committee meetings, access documents, appoint experts to working groups, and these experts may serve as convenors or project leaders. The ISA would not have voting rights, but it can comment (comments are given the same treatment as comments from member bodies). Additionally, the ISA can also put forward a new item proposal. Thereby, asking for the development of a new standard.
3. **Making an arrangement between the ISA and the ISO.** In accordance with article 169(1) UNCLOS, the Secretary-General, with the approval of the Council, has the competence to make arrangements with the ISO, which is a way to formalize the cooperation.

Annex I

Options to strengthen the collaboration between the ISO and the ISA

Option 1: The granting of an observer status within the ISA to the ISO.
The ISO is an independent, non-governmental international organization with a membership made up of members from the national standards bodies of 171 countries. The ISO could be granted an observer status in line with rule 82 of the Rules of Procedure of the Assembly and the Guidelines for observer status of non-governmental organizations with ISA (Annex, ISBA/25/A/16).
In accordance with rule 82(1) of the Rules of Procedure of the Assembly, the following may participate as observers in the Assembly:

(a) States and entities referred to in article 305 of the United Nations Convention on the Law of the Sea which are not members of the Authority;
(b) National liberation movements which in their respective regions are recognized by the Organization of African Unity or by the League of Arab States;
(c) Observers to the Third United Nations Conference on the Law of the Sea who have signed the Final Act and who are not referred to in article 305, paragraph 1 (c), (d), (e) and (f), of the United Nations Convention on the Law of the Sea;
(d) The United Nations, its specialized agencies, the International Atomic Energy Agency and other intergovernmental organizations invited by the Assembly;
(e) Non-governmental organizations with which the Secretary-General has entered into arrangements in accordance with article 169, paragraph 1, of the United Nations Convention on the Law of the Sea, and other non-governmental organizations invited by the Assembly which have demonstrated their interest in matters under the consideration by the Assembly.

Following rule 82(1)(e), there are two different options to grant an observer status to the ISO:

1) The ISO has entered into an arrangement with the ISA.
   - Currently, no such arrangement exists between the ISO and the ISA. This option is explored further in this paper, under option 3.

2) The ISO is invited by the Assembly and has demonstrated its interest in matters under the consideration by the Assembly.
   - The ISO is a party that can demonstrate its interest since the ISO can contribute to the work of the Authority, for example by providing specialized information, advice or expertise.
   - As in line with the Guidelines (Annex, ISBA/25/A/16), the ISO has the expertise and the capacity to contribute, within its field of competence, to the work of the Authority, in particular in connection with the protection of the marine environment, the offshore and deep-sea mining industry, and technology.[3]

In line with rule 75 of the Rules of Procedure of the Council, observers referred to in rule 82 of the rules of procedure of the Assembly may designate representatives to participate, without the right to vote, in the deliberations of the Council, upon the invitation of the Council, on questions affecting them or within the scope of their activities.

The procedure to receive an observer status is as follows:

1. Each application for observer status shall be submitted in the format prescribed in enclosure 1 Annex, ISBA/25/A/16 and shall be addressed to the Secretary-General of the International Seabed Authority.
2. Each applicant shall submit a request in writing no less than three months before the opening of the session of the Assembly at which the request is to be reviewed. Each applicant will be

[3] Please see the scope of the Technical Committee 8 of the ISO 'Ships and marine technology': ISO/TC 8 - Ships and marine technology.

invited to introduce the request and remain available to provide any further information during the consideration of the request by the Assembly.

Option 2: The ISA can become a liaison at the ISO.

Membership of ISO's committees and working groups is primarily made up of delegates and experts appointed by ISO national member bodies. However, there is also the possibility for certain organizations ("external liaison organizations") that meet ISO's criteria to be involved and to appoint liaison representatives. See ISO/IEC Directives, Part 1 for more information.

The categories of liaisons are:

- Category A: Organizations that make an effective contribution to the work of the committee for questions dealt with by this committee. Such organizations are given access to all relevant documentation and are invited to meetings. They may nominate experts to participate in a working group.
- Category B: Organizations that have indicated a wish to be kept informed of the work of the committee. Such organizations are given access to the committee documents.
  - Category B is reserved for intergovernmental organizations.
- Category C: Organizations that make a technical contribution to and participate actively only in a specific working group.

There are different criteria for the different categories of liaisons. For the ISA, it would be best to be a liaison category A. For example, the IMO is also a category A liaison at ISO/TC 8.

The eligibility criteria for category A liaisons are:

- Not for profit
- Legal entity
- Membership-based (worldwide or over a broad region)
- Relevant competence and expertise
- Process for stakeholder engagement and consensus decision-making

As a category A liaison the ISA can participate in committee meetings, access documents, may appoint experts to working groups, and these experts may serve as convenors or project leaders. The ISA would not have voting rights, but it can comment (comments are given the same treatment as comments from member bodies). Additionally, as a Category A liaison the ISA would be able to put forward proposals for the development of new standards. Such a new item proposal is accepted by a 2/3 vote and if 5 national standardization bodies have committed the necessary expertise.

The procedure for the establishment of liaisons is as follows[4]:

1. The organization wishing to create a liaison shall send an application liaison form to the Office of the CEO of the ISO with copies to the committee officers and IEC SEC Technical Officer or ISO CS Technical Programme Manager.
2. The Office of the CEO will confirm that the eligibility criteria have been fulfilled and then consult with the National Body where the organization making the application has its headquarters[5];
3. In case of objection from the National Body where the organization making the application has its headquarters, the matter will be referred to the technical management board for decision;
4. If there is no objection from the National Body where the organization making the application has its headquarters, the application will be sent to the committee Secretary/Committee Manager with a request to circulate it for the vote.

[4] See ISO/IEC Directives, Part 1.

[5] In this case, the Bureau of Standards Jamaica (BSJ).

Option 3: Making an arrangement between the ISA and the ISO.

In accordance with article 169(1) UNCLOS, the Secretary-General shall, on matters within the competence of the Authority, make suitable arrangements, with the approval of the Council, for consultation and cooperation with international and non-governmental organizations recognized by the Economic and Social Council of the United Nations.[6] This includes the drafting of, for example, a memorandum of understanding, which is a way to formalize the cooperation.

[6] The ISO has a ECOSOC General Consultative Status since 1947.

Annex II

Non-paper on the development of environmentally responsible mining technologies
The Kingdom of the Netherlands and Ireland

Background
In 2017, the Netherlands submitted a paper to the ISA, titled "Development of environmentally responsible mining technologies: towards an approval process for mining equipment" (ISBA/23/C/5). Subsequently, the Council, by Council decision, has requested the LTC to consider, as appropriate, this paper in the context of its work on the draft regulations (ISBA/23/C/18). After that Council decision, no further actions seem to have been taken.
In 2019, during an ISA workshop on the development of Standards and Guidelines, the Chairperson of the Subcommittee on Marine Technology (ISO/TC8/SC 13) gave a presentation on the ISO and possible ways to collaborate with the ISA. He offered technical assistance to the ISA on existing relevant international standards and the potential development of new standards to regulate deep-sea mining.
This proposal focuses on the implementation phase, we go from policy to practice in order to continue the work already referred by the Council to the LTC in Council Decision ISBA/23/C/18.

Relevant textual submissions
- DR13. Assessment of applications.
- DR45(2)(f). Development of Environmental Standards and Guidelines.

Introduction proposal
Current available technologies for exploitation are expected to exert different pressures on the ecosystem that may lead to various types of environmental impacts on the marine ecosystem. Environmental regulations and standards should be set to determine the maximum allowable impacts. With new innovation, future technological developments can further reduce the impacts associated with exploitation. A question that arises concerns how exploitation activities and the use of equipment to conduct exploitation will be assessed in relation to their impact on the marine environment using current technologies and future technologies. The use of the latest technical developments and the concept of best available technologies need to be incorporated, as well as the increased knowledge on impacts determined through test mining and future in-situ activity. Currently, it is impossible to foresee future technological advances. The use of an adaptive management approach could facilitate the application and incorporation of future technological developments.

Objectives of this proposal
1) Explore which existing ISO standards might be relevant for deep-sea mining.
2) To develop an assessment and approval methodology for equipment, operational procedures and processes used in deep sea mining exploitation.

How can standardization play a role?
Standardization refers to the development of private standards with the involvement of all parties concerned. The International Organization for Standardization (ISO) is an example whose international standards (ISO standards) represent a consensus of participating entities on a solution to a particular issue. They provide requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are safe to use and fit for their purpose.

The International Organization for Standardization

The ISO is an independent, non-governmental international organization with a membership made up of members from the national standards bodies of 171 countries. These national standardization bodies ensure access of all relevant national partners to the ISO.

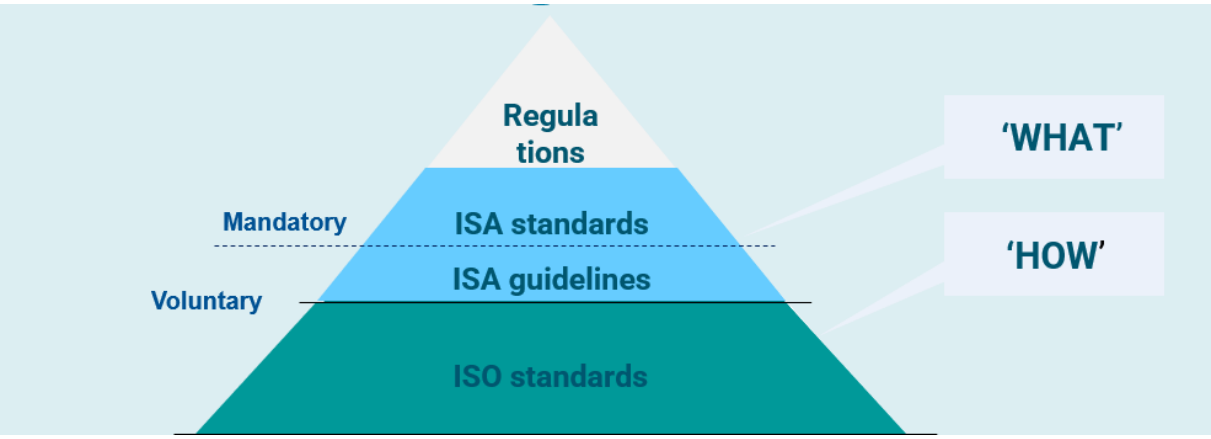
They provide rules, guidelines or characteristics for activities or for their results, aimed at achieving the optimum degree of order in a given context. This can take many forms, including product standards, test methods, codes of practice, guideline standards and management systems standards.

The ISO is structured by Technical Committees that lead the development of standards. As it turns out there already exists a Technical Committee on 'Ships and marine technology'. Under this Technical Committee, there is a subcommittee focusing on 'Marine Technology'. The scope of this subcommittee is described as: "Standardisation of test methods, operation, design, construction and logistics of equipment, systems, infrastructure and technology used for observation, exploitation and protection of the ocean and sea areas."

The ISO liaises with UN specialized agencies that do technical harmonization or technical assistance, including the UN Economic and Social Council (ECOSOC) and the International Maritime Organization (IMO).

The process of private standardization is built on several core principles: openness, transparency, effectiveness, relevance, stakeholder engagement and consensus. This offers several advantages: use the knowledge available in the private sector, while protecting public interests. Contractors will be familiar with standardization and it will ensure similarly high standards are used.
Standardization would be additional to the legal framework developed within the ISA.

- ➔ The **WHAT** is contained in the mining code (regulations + Standards & Guidelines).
  Example: environmental thresholds
- ➔ The **HOW** to adhere to these requirements can be written in ISO standards.
  Example: a methodology of measuring environmental impact, ensuring that the reported impact values are consistent and valid.



ISO Standards are in principle voluntary. However, the legislator – in this case the ISA – can decide to refer to ISO Standards in the mining code. There are two options for the legislator in choosing how to refer to the ISO Standard:

1) The legislator refers to the ISO Standard in a **non-legally binding manner**;
   - In those cases, the ISO Standard is voluntary. Contractors can also use other ways (an equivalent alternative) to demonstrate that they comply with legislation. However, using the ISO standard can be expected to be the most efficient and less time consuming.
   - There is a 'presumption of conformity'. If a Contractor complies with the ISO Standard, there is a presumption that the Contractor is acting conform the requirements in the legislation.

2) The legislator refers to the ISO Standard in a **legally binding manner**.
   - In those cases, the ISO Standard is mandatory. Contractors cannot use other ways to demonstrate that they comply with the legislation.
   - There is a 'presumption of conformity'. If a Contractor complies with the ISO Standard, there is a presumption that the Contractor is acting conform the requirements in the legislation.

<u>Reasons for standardization to play a role</u>

- Standardization can help to incorporate new technological developments.
- Standardization can provide clarity and a level-playing field.
- Development of an assessment and approval methodology for equipment, operational procedures and processes used in deep sea mining exploitation in an ISO standard can assist with the workload of the LTC.
- A range of applicable standards already exist, particularly for the shipping industry and monitoring of environmental impacts. Contractors will be familiar with the process of standardization.

<u>Next steps to consider</u>

1. The Authority needs to adopt rules, regulations and procedures setting out the general requirements that mining equipment and operational procedures would need to meet;
2. The private sector would then be responsible for developing technical standards that would meet the more general requirements established by those rules, regulations and procedures;
3. The process of developing standards could be done by an international standardization body, such as the International Organization for Standardization;
4. The Authority should check whether any existing standards could already meet the general requirements or could form a basis for the development of new standards (e.g. for the ISO to establish a liaison with the ISA);
5. Before approving the standards for adoption and thus for use as standards for reference, the Authority should check whether these standards meet the general requirements for mining equipment and their operational procedures;