



## **CALL FOR PROPOSAL 2024/OEMMR/004**

**Consultancy on the preparation of a geological and habitat model for polymetallic massive sulphides (PMS) in the Area based on machine learning and artificial intelligence techniques**

**Deadline for submission: 31 August 2024**

### **BACKGROUND**

1. The International Seabed Authority (ISA) is an international organization established under the 1982 United Nations Convention on the Law of the Sea and the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea. The Authority is the organization through which States Parties to the Convention shall, in accordance with the regime for the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction (the Area) established in Part XI and the Agreement, organize and control activities in the Area, particularly with a view to administering the resources of the Area.

2. The ISA is required to take the measures necessary to control and organize current exploration activities, as well as future mining activities, in the Area. In so doing, ISA has the obligation to take the necessary measures to acquire technology and scientific knowledge relating to activities in the Area; and to promote and encourage the transfer to developing States of such technology and scientific knowledge relating to activities in the Area so that all States Parties benefit therefrom.

3. In particular ISA and States Parties shall initiate and promote: a) programmes for the transfer of scientific knowledge to the Enterprise and to developing States with regard to activities in the Area, including facilitating the access of the Enterprise and of developing States to the relevant technology and information, under fair and reasonable terms and conditions; b) measures directed towards the advancement of marine scientific research and technology of the member countries, the Enterprise and the domestic technology of developing States, particularly by providing opportunities to personnel from the Enterprise and from developing States for training in marine science and technology and for their full participation in activities in the Area (UNCLOS, art. 144).

4. Machine learning by artificial intelligence (AI) represents a new frontier in all ocean activities and aspects of the blue economy. It builds on data obtained by ocean observation and monitoring and the collection of key information on water column and seabed habitats, mineral occurrences, and potential natural hazards. AI has the potential to model and predict various aspects of oceanography, geology, mineral resources, biodiversity, and the environmental effects of all human activities.
5. In this context, the ISA Secretariat has decided to produce high quality global assessments of all three seabed mineral types currently under exploration (polymetallic nodules (PMN), polymetallic massive sulphides (PMS) and cobalt-rich ferromanganese crusts (CFC)) and their associated biodiversity and habitats, based on state-of-the-art machine learning approaches for the purpose of public release to enhance the understanding of the advancing artificial intelligence technologies, the marine seabed, the seabed mineral occurrences, their potential resources and associated biodiversity and habitats, all in support of their sustainable development and environmental protection and monitoring in the Area.
6. ISA is seeking a consultant with requisite experience and expertise in (i) marine seabed minerals, particularly PMS; (ii) the geological modelling of mineral deposits based on artificial intelligence; (iii) metallogenetic research, including ore-forming processes, geological and marine settings, computer-based process modelling; (iv) familiarity with mineral resource assessments, (v) the assessment of marine biodiversity and identification of habitats commonly associated with PMS occurrences; and (vi) the definition of biogeographic areas based on the identification and forecast of seabed, ridge-hosted habitat to prepare a draft geological model for the assessment of PMS occurrences in the Area of the seabed beyond national jurisdiction.
7. Proposals in line with the scope of work in the appended Terms of Reference are to be submitted via email to [rfp@isa.org.jm](mailto:rfp@isa.org.jm) on or before 31 August 2024.
8. Proposals should be concise but reflect a clear methodology demonstrating the competence and expertise of the potential consultant to carry out the tasks described in the Terms of Reference and including an itemized financial proposal. The resume of every team member who would be assigned to this project should be attached to the proposal.
9. Potential consultants are to send their requests for clarifications or questions regarding this call for proposals via email: [rfp@isa.org.jm](mailto:rfp@isa.org.jm).

## **GENERAL INSTRUCTIONS**

10. Proposals must be expressed in English and should be valid for a minimum period of 60 days. The currency for fees quoted must be United States dollars (USD).
11. Potential consultants must complete Annex A and attach it to the proposal.
12. It is the responsibility of the potential consultant to ensure that proposals reach ISA on or before the deadline.

13. Submission of a proposal shall be deemed to constitute an acknowledgment by the applicant of the General Conditions of Contracts for the services of Consultants and Individual Contractors (Annex C).
14. ISA implements a zero-tolerance policy on fraud and other proscribed practices, including corruption, unethical practices and obstruction. ISA is committed to preventing, identifying and addressing all such acts and practices against ISA and third parties involved in its activities.
15. ISA requests that every potential consultant prevents and avoids conflicts of interest by disclosing clearly to ISA any involvement or possible conflict of interest in the preparation of their proposal.

**CALL FOR PROPOSAL 2024/OEMMR/004**

**Consultancy on the preparation of a geological and habitat model for polymetallic massive sulphides in the Area based on artificial intelligence techniques**

**ANNEX A – BIDDER INFORMATION FORM**

Date: (day, month, year)

Page \_\_\_ of \_\_\_

1. Full name of company:
2. Legal address:
3. E-Mail address:
4. Attach a copy of the certificate of registration
5. Provide a general description of your related experience in the field:
6. Supply information regarding project experience for the past 5 years which is relevant to the services required:
7. Provide any additional information that you consider key in meeting/exceeding the requirements:
8. Are there any indicting circumstances that the ISA should be made aware of?  Please provide details:
9. Name and signature of authorized representative:

## **CALL FOR PROPOSAL 2024/OEMMR/004**

### **Consultancy on the preparation of a geological and habitat model for polymetallic massive sulphides in the Area based on artificial intelligence techniques**

#### **ANNEX B – TERMS OF REFERENCE**

**Organization:** International Seabed Authority (ISA)

**Position type:** Consultancy

**Job title:** Consultant – Geological and habitat model for polymetallic massive sulphides in the Area based on artificial intelligence techniques

**Duration:** September 2024 - December 2024

**Reporting to:** Programme Manager (Mining Geology)

#### **ORGANIZATIONAL CONTEXT**

Marine exploration and potential future exploitation for marine minerals is an emerging field of activities to ensure future access to raw materials for low carbon industries from common sources with less environmental impact. It furthermore attracts high-technology, intelligent, low-impact and remotely operated solutions which allow for environmentally sustainable recovery under deep-sea conditions.

It is in this context that the ISA Secretariat initiated a study to assess the current state of technology used in deep-sea exploration and associated research. In this process, five priority areas were identified including: (i) ocean observation and communication; (ii) monitoring, (iii) autonomy, automation and robotics; (iv) machine learning and artificial intelligence; and (v) mining, energy and processing.

In pursuance of the strategies and priorities identified above, ISA convened a hybrid expert scoping workshop on advancing technologies to support the sustainable development of mineral resources of the Area, from 3-5 April 2024, at the Institute for Systems and Computer Engineering, Technology and Science (INESC TEC) in Porto, Portugal. The meeting was held in person and delivered via the Microsoft Teams platform. The workshop aimed to assess the types of current and available technologies, the best industry practices, and at strategic partnerships to build and develop the capacities of developing States, members of ISA current needs and priorities, as well as discuss emerging technologies to identify the strategic directions for targeted research and innovation efforts towards developing effective technologies for activities in the Area. It addressed the opportunities for future cooperation and aimed to identify emerging fields of joint efforts for contractors, companies, research institutions and technology experts. It was also the intent to highlight and strengthen the linkage between exploration activities and the development of mining

technologies towards advancing and applying innovative technological solutions to support the transition from exploration to exploitation phases. The discussions identified existing and potential partners, as well as ways and means to facilitate innovations for advancing smart technologies to effectively support the work of ISA.

Machine learning by artificial intelligence (AI) represents a new frontier in all ocean activities and aspects of the blue economy. It builds on data obtained by ocean observation and monitoring and the collection of key information on water column and seabed habitats, mineral occurrences, and potential natural hazards. AI has the potential to model and predict various aspects of oceanography, geology, mineral resources, biodiversity, and the environmental effects of all human activities.

## **OBJECTIVE**

The ISA Secretariat intends to produce high quality global assessments of all three seabed mineral types currently under exploration (PMN, PMS, CFC) and their associated biodiversity and habitats, based on state-of-the-art machine learning approaches for the purpose of public release to enhance the understanding of the advancing artificial intelligence technologies, the marine seabed, the seabed mineral occurrences, their potential resources and associated biodiversity and habitats, all in support of their sustainable development and environmental protection and monitoring in the Area.

This consultancy will support and provide relevant scientific and technical inputs.

## **SCOPE OF WORK**

The consultancy covers (i) the scoping of available bathymetric, geological, oceanographic, PMS mineral and biodiversity data from exploration activities using public databases including ISA's DeepData and potentially marine scientific research and validation of their data quality, (ii) the use of qualification and quantification criteria to assess the PMS resources along the global Mid-ocean ridges (MOR) in the Area, (iii) the development of qualification and quantification criteria to assess the associated habitats and biodiversity along the global Mid-ocean ridges (MOR) in the Area, (iv) the development of appropriate machine learning procedures for the testing of the AI model and the forecast of PMS occurrences along the global Mid-ocean ridges (MOR) in the Area, (v) the production of a series of maps for resource assessments (identified and forecasted PMS occurrences, resource assessments, forecasted tonnages) and habitat identification and mapping, including the identification of biogeographical zones along the MORs in the Area and (vi) the delivery of process description and the identification of emerging machine learning procedures, software, and digital technologies with a focus on potential automation to identify ways and means to facilitate innovations for advancing smart technologies to effectively support the work of ISA.

Working closely with the Office of Environmental Monitoring and Mineral Research (OEMMR) of the ISA Secretariat, the consultant shall undertake the following tasks:

**1. *Revision and documentation of computer-based artificial intelligence methods for marine mineral occurrences***

- i. Review the existing digital solutions, technologies and actual technological innovations relevant for computer-based artificial intelligence.
- ii. Assess the required data quality input necessary for valuable (marine) mineral modelling and assessments.
- iii. Provide expert knowledge on different methods of digital geological and mineral modelling and assessments.
- iv. Document the existing digital solutions and develop a state-of-the-art implementation programme with customized digital approaches and set-up design for PMS occurrences.
- v. Prepare lists of references, figures and tables and abbreviations.

**2. *Provide the geological modelling of PMS occurrences in the Area outside national jurisdiction, based on digital artificial intelligence methods***

- i. Prepare a digital geological model for PMS occurrences in the Area, based on existing and available data and in discussion with the secretariat and other experts where necessary.
- ii. Working with OEMMR, assist in identifying and coordinating with contributing experts, and discuss and liaise with the experts to ensure best informed modelling.
- iii. Produce the first consolidated draft of the geological modelling of PMS, based on existing and available data inputs, this would involve:
- iv. Prepare an overview of the different digital technologies and computer programmes for artificial intelligence, including synthesis of the information presented, and if possible, any trends, patterns, or gaps of knowledge.
- v. Where feasible, addressing key content gaps in the draft geological modelling and assessment, such as incorporating key references that are missing.
- vi. Provide a summary of available and missing geological and technological data (technological methods and technology developed for mineral exploration, environmental protection, monitoring) in DeepData, as provided by the secretariat, and in open sources.
- vii. Identify potential reviewers for the PMS geological model for quality and assessment control.

**3. *Provide the habitat and biogeographical modelling of PMS occurrences in the Area outside national jurisdiction, based on digital artificial intelligence methods***

- i. Prepare a digital biodiversity (habitat) model for PMS occurrences in the Area, based on existing and available data and in discussion with the secretariat and other experts where necessary.
- ii. Working with OEMMR, assist in identifying and coordinating with contributing experts, and discuss and liaise with the experts to ensure best informed modelling.

- iii. Produce the first consolidated draft of the geological modelling of PMS, based on existing and available data inputs, this would involve:
- iv. Prepare an overview of the different digital technologies and computer programmes for artificial intelligence, including synthesis of the information presented, and if possible, any trends, patterns, or gaps of knowledge.
- v. Where feasible, addressing key content gaps in the draft habitat and biogeographical modelling and assessment, such as incorporating key references that are missing.
- vi. Provide a summary of available and missing habitat, biogeographical data (technological methods and technology developed for mineral exploration, environmental protection, monitoring) in DeepData, as provided by the secretariat, and in open sources.
- vii. Identify potential reviewers for the PMS habitat and biogeographical model for quality and assessment control.

**4. *Provide technical inputs to the preparation of ISA publication/policy brief, based on the outcomes of the digital PMS geological, habitat and biogeographical model***

- i. Provide scientific inputs to the ISA publication/policy brief, focusing on future digital and technological solutions for the assessment of PMS and by drafting executive summaries for the technological and methodical chapters.
- ii. Supporting the development of a state-of-the-art implementation programme with customized technological approaches for capacity development and technology transfer.

## **OUTPUTS AND TIMELINE**

Under the overall supervision of the Director of OEMMR and direct supervision of the Programme Manager (Mining Geology), the consultant will produce the following outputs to be completed in three months upon signature of a contract:

- Output 1
  - Inputs needed for the revision and documentation of computer-based artificial intelligence methods for marine mineral occurrences
  - Submission and Draft for the documentation (Section 1, 30 October 2024)
- Output 2
  - Inputs needed for the geological model for PMS (Section 2, 15 November 2024)
  - Submission and Draft for the PMS model (Section 2, 30 November 2024)
- Output 3
  - Inputs to the finalization of the CFC geological model (Section 2, 15 December 2024)
  - Inputs to the publication/policy brief and submission (Section 3, 30 December 2024)

## **TERMS OF PAYMENT**

For this consultancy, proposed fees should be in line with Level C of page 21 of ISA's Administrative Instruction on consultants [ISBA/ST/AI/2021/1](#) as relevant professional experience and specialized/technical knowledge and skills are required.

The amount to be agreed will be paid in three installments as follows:

- 50% upon the delivery and approval of outputs 1 and 2
- 20% upon the delivery of the report, and
- 30% after the completion of the consultancy.

The agreed fee will be deemed to include all costs to be incurred in undertaking all the tasks outlined above.

## **QUALIFICATIONS AND SKILLS**

ISA is seeking an organization with requisite experience and expertise in (i) marine seabed minerals, particularly PMS; (ii) the geological modelling of mineral deposits based on artificial intelligence; (iii) metallogenetic research, including ore-forming processes, geological and marine settings, computer-based process modelling; (iv) familiarity with mineral resource assessments; (v) the assessment of marine biodiversity and identification of habitats commonly associated with PMS occurrences; and (vi) the definition of biogeographic areas based on the identification and forecast of seabed, ridge-hosted habitats.

The consultant should possess:

- Good level of familiarisation with the work of the ISA.
- Proven knowledge of geological modelling based on digital methods of artificial intelligence.
- Proven knowledge of habitat and biogeographical modelling based on digital methods of artificial intelligence.
- Previous experiences in projects with intergovernmental organizations or national governments is an asset.
- The team of experts should hold an advanced degree in a field related to mineral assessment and geological modelling.

## **SELECTION / EVALUATION**

All proposals will be reviewed by a committee. Selection will be based on the following:

- Experience in the relevant field
- The financial proposal
- Availability to carry out the project between September and December 2024

Only shortlisted applicants will be contacted.

## **MODALITIES OF WORK**

The work shall be performed at the consultant's home base with scheduled virtual meetings with ISA Secretariat staff, as required.

To facilitate timely and accurate outcomes by the consultant, the OEMMR Director and the OEMMR Programme Manager (Mining Geology) will make reasonable and practical efforts to respond promptly to the consultant's queries and provide the necessary reference material as identified by the consultant, where feasible.

## **MONITORING**

The consultant will report to and receive guidance from the Programme Manager (Mining Geology), who will review and approve the deliverables/outputs following close consultation and cooperation with the relevant offices in the Secretariat.

**CALL FOR PROPOSAL 2024/OEMMR/004**  
**Consultancy on the preparation of a geological and habitat model for polymetallic massive sulphides in the Area based on artificial intelligence techniques**

**ANNEX C – GENERAL CONDITIONS OF CONTRACTS FOR THE SERVICES OF  
CONSULTANTS AND INDIVIDUAL CONTRACTORS**

**1. Legal status**

1. The consultant or individual contractor shall have the legal status of an independent contractor vis-à-vis the International Seabed Authority. The contractor [Any representative or employee of the contractor]<sup>1</sup> shall not be regarded, for any purposes, as being either a staff member of the Authority, under the Staff Regulations and Rules of the Authority, or an official of the Authority, for purposes of the Protocol on the Privileges and Immunities of the International Seabed Authority. Accordingly, nothing within or relating to the contract shall establish the relationship of employer and employee, or of principal and agent, between the Authority and the contractor.

1 Where the contractor is an institutional or corporate consultant, the term “contractor” as used in the present General Conditions includes its representatives and employees.

**2. Standards of conduct**

2. The contractor shall neither seek nor accept instructions from any authority external to the International Seabed Authority in connection with the performance of the obligations under the contract. Should any authority external to the Authority seek to impose any instructions on the contractor regarding the contractor’s performance under the contract, the contractor shall promptly notify the Authority and shall provide all reasonable assistance required by the Authority. The contractor shall not take any action in respect of the performance of the contract or otherwise related to the contractor’s obligations under the contract that may adversely affect the interests of the Authority, and the contractor shall perform the obligations under the contract with fullest regard for the interests of the Authority. The contractor warrants that the contractor has not offered and shall not offer any direct or indirect benefit arising from or related to the performance of the contract or the award thereof to any representative, official or employee of the Authority. The contractor shall comply with all applicable laws, ordinances, rules and regulations bearing upon the performance of the obligations under the contract.

3. The contractor acknowledges and agrees that any breach of any of the provisions hereof shall constitute a breach of an essential term of the contract, and, in addition to any other legal rights or remedies available to any person, shall give rise to grounds for termination of the contract. In addition, nothing herein shall limit the right of the Authority to refer any alleged breach of the foregoing standards of conduct to the relevant national authorities for appropriate action.

4. The contractor may not at any time communicate any information to any other person, Government or authority external to the Authority or known to them by reason of their association with the Authority that has not been made public, except in the course of their duties or by

authorization of the Secretary-General or any designate by the Secretary-General; nor shall the contractor at any time use such information to private advantage. These obligations do not lapse upon termination of the contract with the Authority.

### **3. Title rights, copyrights, patents and other proprietary rights**

5. Title to any equipment and supplies that may be furnished by the Authority to the contractor for the performance of any obligations under the contract shall rest with the Authority, and any such equipment shall be returned to the Authority upon completion of work under the contract or when no longer needed by the contractor. Such equipment, when returned to the Authority, shall be in the same condition as when delivered to the contractor, subject to normal wear and tear, and the contractor shall be liable to compensate the Authority for any damage or degradation of the equipment beyond normal wear and tear.

6. The Authority shall be entitled to all intellectual property and other proprietary rights, including but not limited to patents, copyrights and trademarks, with regard to products, processes, inventions, ideas, know-how or documents and other materials that the contractor has developed for the Authority under the contract and that bear a direct relation to or are produced, prepared or collected in consequence of, or during the course of, the performance of the contract, and the contractor acknowledges and agrees that such products, documents and other materials constitute works made for hire for the Authority. However, to the extent that any such intellectual property or other proprietary rights consist of any intellectual property or other proprietary rights of the contractor: (a) that pre-existed the performance by the contractor of the obligations under the contract; or (b) that the contractor may develop or acquire, or may have developed or acquired, independently of the performance of the obligations under the contract, the Authority does not and shall not claim any ownership interest thereto, and the contractor grants to the Authority a perpetual licence to use such intellectual property or other proprietary right solely for the purposes of and in accordance with the requirements of the contract. At the request of the Authority, the contractor shall take all necessary steps, execute all necessary documents and, generally, assist in securing such proprietary rights and transferring or licensing them to the Authority in compliance with the requirements of the applicable law and of the contract. Subject to the foregoing provisions, all maps, drawings, photographs, mosaics, plans, reports, estimates, recommendations, documents and other data compiled or received by the contractor under the contract shall be the property of the Authority, shall be made available for use or inspection by the Authority at reasonable times and in reasonable places, shall be treated as confidential and shall be delivered only to authorized officials of the Authority upon completion of work under the contract.

### **4. Confidential nature of documents and information**

7. Information and data that are considered proprietary by either the Authority or the contractor or that are delivered or disclosed by one of them ("discloser") to the other ("recipient") during the course of performance of the contract, and that is designated as confidential ("information") shall be held in confidence and shall be handled as follows: the recipient of such information shall use the same care and discretion to avoid disclosure, publication or dissemination of the discloser's information as it uses with its own similar information that it does not wish to disclose, publish or

disseminate, and the recipient may use the discloser's information solely for the purpose for which it was disclosed. The recipient may not disclose confidential information to any other party unless with the discloser's prior written consent. Subject to and without any waiver of the privileges and immunities of the Authority and its officials, the contractor may disclose information to the extent required by law, provided that the contractor will give the Authority sufficient prior notice of a request for the disclosure of information in order to allow the Authority to have a reasonable opportunity to take protective measures or such other action as may be appropriate before any such disclosure is made. The Authority may disclose information to the extent required pursuant to the United Nations Convention on the Law of the Sea and the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, and the rules, regulations and procedures of the Authority. The recipient shall not be precluded from disclosing information that is obtained by the recipient from a third party without restriction, is disclosed by the discloser to a third party without any obligation of confidentiality, is previously known by the recipient or is developed at any time by the recipient completely independently of any disclosures hereunder. These obligations and restrictions of confidentiality shall be effective during the term of the contract, including any extension thereof, and, unless otherwise provided in the contract, shall remain effective following any termination of the contract.

8. Confidential information means information that:

- (a) Is by its nature confidential;
- (b) Is designated by the Authority as confidential;
- (c) The contractor knows or ought to know is confidential.

9. Confidential information does not include information that:

- (a) Is or becomes public knowledge by means other than by breach of the contract;
- (b) Is in the possession of the contractor without restriction to disclosure before the date of receipt from the Authority;
- (c) Has been independently developed or acquired by the contractor;
- (d) Was in the possession of the contractor prior to the commencement date of the contract;
- (e) Is obtained by the contractor from a third party that is free to divulge the same.

10. The Authority may at any time require the contractor to give a written undertaking, in a form required by the Authority, relating to the non-disclosure of confidential information. In the written undertaking, the contractor is required to acknowledge that the provisions of article 168 of the United Nations Convention on the Law of the Sea related to the responsibilities of the staff of the Authority apply, mutatis mutandis, to the contractor. The contractor shall promptly arrange for all such undertakings to be given.

## **5. Travel, statement of good health and service-incurred death, injury or illness**

11. If the contractor is required by the Authority to travel beyond commuting distance from his or her usual place of residence, such travel shall be at the expense of the Authority and shall be governed by conditions equivalent to the relevant provisions of the administrative instruction of the Authority on official travel. In such cases, the travel expenses borne by the Authority shall not exceed the cost of travel by the least costly economy class regularly available or its equivalent when by air, unless a higher standard is approved in advance by, or on behalf of, the Secretary-General of the Authority.

12. Prior to the commencement of the contractor's services in any offices or premises of the Authority or before engaging in any travel required by the Authority or connected with the performance of the contract, the contractor shall submit a certificate of good health provided by a medical practitioner for himself or herself, or for the representative or employee concerned, and certify that he or she, or the representative or employee concerned, is in possession of medical or health insurance during the period of the contractor's services. The contractor shall provide such a certificate of good health and certification of the medical or health insurance that includes medical treatment as soon as practicable following the signature of the contract. The contractor warrants the accuracy of any such certificate of good health, including but not limited to confirmation that the contractor has been fully informed regarding the requirements for inoculations for the country or countries to which travel may be authorized.

13. The contractor shall be responsible for assuming all costs that may be incurred in relation to the certificate of good health and medical or health insurance.

14. In the event of the death, injury or illness of the contractor that is attributable to the performance of services on behalf of the Authority under the terms of the contract while the contractor is travelling at the Authority's expense or is performing any services under the contract in any offices or premises of the Authority, [the representative or employee of] the contractor or his or her dependants, as appropriate, shall be entitled to compensation equivalent to that provided under appendix B to the Staff Rules of the Authority.

## **6. Prohibition on assignments and modifications**

15. The contractor may not assign, delegate, transfer, pledge or make any other disposition of the contract, of any part thereof, or of any of the rights, claims or obligations under the contract except with the prior written authorization of the Authority, and any attempt to do so shall be null and void. The terms or conditions of any supplemental undertakings, licences or other forms of agreement concerning any goods or services to be provided under the contract shall not be valid and enforceable against the Authority or in any way constitute an agreement by the Authority thereto, unless any such undertakings, licences or other forms of agreement are the subject of a valid written undertaking by the Authority.

16. No modification or change in the contract shall be valid and enforceable against the Authority unless provided by means of a valid written amendment to the contract signed by the contractor or a duly authorized representative thereof and a duly authorized representative of the Authority.

## **7. Subcontractors**

17. In the event that the contractor requires the services of subcontractors to perform any obligations under the contract, the contractor shall obtain the prior written approval of the Authority for any such subcontractors. The Authority may, at its sole discretion, reject any proposed subcontractor or require such subcontractor's removal without having to give any justification therefor, and such rejection shall not entitle the contractor to claim any delays in the performance or to assert any excuses for the non-performance of any of the obligations under the contract. The contractor shall be solely responsible for all services and obligations performed by its subcontractors. The terms of any subcontract shall be subject to, and shall be construed in a manner that is fully in accordance with, all of the terms and conditions of the contract. The contractor shall not assign work to be performed under the contract to any person other than those accepted by the Authority in the form of written notification.

## **8. Use of the name, emblem or official seal of the authority**

18. The contractor shall not advertise or otherwise make public for purposes of commercial advantage or goodwill that the contractor has a contractual relationship with the Authority; nor shall the contractor in any manner whatsoever use the name, emblem or official seal of the Authority or any abbreviation of the name of the Authority in connection with its business or otherwise without the written permission of the Authority.

## **9. Indemnification**

19. The contractor shall indemnify, defend and hold and save harmless the Authority and its officials, agents and employees from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature, including but not limited to all litigation costs and expenses, attorney's fees, settlement payments and damages, based on, arising from or relating to:

(a) Allegations or claims that the use by the Authority of any patented device, any copyrighted material or any other goods or services provided to the Authority for its use under the terms of the contract, in whole or in part, separately or in combination, constitutes an infringement of any patent, copyright, trademark or other intellectual property right of any third party;

(b) Any acts or omissions of the contractor or of any subcontractor or anyone directly or indirectly employed by them in the performance of the contract that give rise to legal liability to anyone not a party to the contract, including, without limitation, claims and liability in the nature of a claim for workers' compensation.

## **10. Insurance**

20. The contractor shall pay the Authority promptly for all loss, destruction or damage to the property of the Authority caused by the contractor or of any subcontractor or anyone directly or indirectly employed by them in the performance of the contract.

21. The contractor shall be solely responsible for taking out and for maintaining adequate liability and property damage insurance required to meet any of the obligations under the contract and in

respect of any tort action or tort claim arising out of the contractor's acts or omissions related to the contract, as well as for arranging, at the contractor's sole expense or at that of its representative or employee, such life, health and other forms of insurance as the contractor may consider to be appropriate to cover the period during which the contractor provides services under the contract. The contractor shall, upon request by the Authority, provide proof of such insurance.

22. The contractor acknowledges and agrees that none of the insurance arrangements that the contractor may make shall in any way be construed to limit the contractor's liability arising under or relating to the contract.

### **11. Encumbrances and liens**

23. The contractor shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file or to remain on file in any public office or on file with the Authority against any monies due to the contractor or to become due for any work done or against any goods supplied or materials furnished under the contract or by reason of any other claim or demand against the contractor.

### **12. Force majeure and other changes in conditions**

24. In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the contractor shall give notice and full particulars in writing to the Authority of such occurrence or cause if the contractor is thereby rendered unable, wholly or in part, to perform the obligations and meet the responsibilities under the contract. The contractor shall also notify the Authority of any other changes in condition or the occurrence of any event that interferes or threatens to interfere with the contractor's performance of the contract. Not more than 15 days following the provision of such notice of force majeure or other changes in condition or occurrence, the contractor shall also submit a statement to the Authority of estimated expenditures that will likely be incurred for the duration of the change in condition or the event. Upon receipt of the notice(s) required hereunder, the Authority shall take such action as it considers, at its sole discretion, to be appropriate or necessary in the circumstances, including the granting to the contractor of a reasonable extension of time in which to perform any obligations under the contract.

25. If the contractor is rendered permanently unable, wholly or in part, by reason of force majeure to perform the obligations and meet the responsibilities under the contract, the Authority shall have the right to suspend or terminate the contract on the same terms and conditions as provided for below, under "Termination", except that the period of notice shall be five days instead of any other period of notice. In any case, the Authority shall be entitled to consider the contractor permanently unable to perform the obligations under the contract in the case of the contractor's suffering any period of suspension in excess of 30 days.

26. Force majeure as used herein means any unforeseeable and irresistible act of nature, any act of war (whether declared or not), invasion, revolution, insurrection, strikes or other labour disturbances, riots, floods, storms, earthquakes, fires or any other acts of a similar nature or force, provided that such acts arise from causes beyond the control and without the fault or negligence of the contractor.

### **13. Termination**

27. Either party may terminate the contract before the expiry date of the contract, in whole or in part, upon giving written notice to the other party. The period of notice shall be 5 days in the case of contracts for a total period of less than two months and 14 days in the case of contracts for a longer period. The initiation of conciliation or arbitral proceedings, as provided below, shall not be deemed to be a cause for or otherwise to be in itself a termination of the contract.

28. The Authority may, without prejudice to any other right or remedy available to it, terminate the contract forthwith in the event that: (a) the contractor is adjudged bankrupt, is liquidated or becomes insolvent, applies for a moratorium or stay on any payment or repayment obligations, or applies to be declared insolvent; (b) the contractor is granted a moratorium or a stay or is declared insolvent; (c) the contractor makes an assignment for the benefit of one or more of the contractor's creditors; (d) a receiver is appointed on account of the insolvency of the contractor; (e) the contractor offers a settlement in lieu of bankruptcy or receivership; or (f) the Authority reasonably determines that the contractor has become subject to a materially adverse change in the financial condition that threatens to endanger or otherwise substantially affect the ability of the contractor to perform any of the obligations under the contract.

29. In the event of any termination of the contract, upon receipt of notice of termination by the Authority, the contractor shall, except as may be directed by the Authority in the notice of termination or otherwise in writing: (a) take immediate steps to bring the performance of any obligations under the contract to a close in a prompt and orderly manner and, in doing so, reduce expenses to a minimum; (b) refrain from undertaking any further or additional commitments under the contract as of and following the date of receipt of such notice; (c) deliver all completed or partially completed plans, drawings, information and other property that, if the contract had been completed, would have been required to be furnished to the Authority thereunder; (d) complete performance of the work not terminated; and (e) take any other action that may be necessary, or that the Authority may direct in writing, for the protection and preservation of any property, whether tangible or intangible, related to the contract that is in the possession of the contractor and in which the Authority has or may be reasonably expected to acquire an interest.

30. A contractor may terminate the contract if: (a) the Authority is in arrears of any payment due under the contract for more than 30 days; (b) the Authority is in breach of any of the terms or conditions under the contract.

31. In the event of any termination of the contract, the Authority shall only be liable to pay the contractor compensation on a pro rata basis for no more than the actual amount of work performed to the satisfaction of the Authority in accordance with the requirements of the contract. Additional costs incurred by the Authority resulting from the termination of the contract by the contractor may be withheld from any amount otherwise due to the contractor from the Authority.

#### **14. Non-exclusivity**

32. The Authority shall have no obligation respecting, and no limitations on, its right to obtain goods of the same kind, quality and quantity, or to obtain any services of the kind described in the contract, from any other source at any time.

#### **15. Taxation**

33. Article 183 of the United Nations Convention on the Law of the Sea provides, inter alia, that within the scope of its official activities, the Authority, its assets and property, its income, and its operations and transactions, authorized by the Convention, shall be exempt from all direct taxation, and that goods imported or exported for its official use shall be exempt from all customs duties. The Authority shall not claim exemption from taxes that are no more than charges for service rendered.

34. In the event that any governmental authority refuses to recognize the exemptions of the Authority from such taxation and customs duties, the contractor shall immediately consult with the Authority to determine a mutually acceptable procedure. The Authority shall have no liability for taxes, duty or other similar charges payable by the contractor in respect of any amounts paid to the contractor under the contract, and the contractor acknowledges that the Authority will not issue any statements of earnings to the contractor in respect of any such payments.

#### **16. Settlement of disputes**

35. **Amicable settlement.** The Authority and the contractor shall use their best efforts to amicably settle any dispute arising out of the contract or the breach, termination or invalidity thereof. Where the parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the applicable Conciliation Rules of the United Nations Commission on International Trade Law (UNCITRAL), or according to such other procedure as may be agreed between the parties in writing.

36. **Arbitration.** Any dispute between the parties arising out of the contract, or the breach, termination or invalidity thereof, unless settled amicably as provided above, shall be referred by either of the parties to arbitration in accordance with the applicable UNCITRAL Arbitration Rules. The number of arbitrators shall be three. The language to be used in arbitral proceedings shall be English. The decisions of the arbitral tribunal shall be based on general principles of international commercial law. The arbitral tribunal shall have no authority to award punitive damages. The parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such dispute, controversy or claim.

#### **17. Privileges and immunities**

37. Nothing in or relating to the contract shall be deemed a waiver, express or implied, of any of the privileges and immunities of the Authority and its officials.

## **18. Miscellaneous**

38. The contract may be executed by parties with the use of electronic signatures in several counterparts, each of which shall be an original but all of which shall together constitute one and the same instrument.

39. The contract embodies the entire agreement and understanding between the contractor and the Authority and supersedes any and all prior agreements and understandings between parties.