



## Council

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### **Summary report of the Chair of the Legal and Technical Commission on the work of the Commission during the eighteenth session of the International Seabed Authority**

#### **I. Introduction**

1. The Legal and Technical Commission held 17 meetings during the eighteenth session of the International Seabed Authority. The Commission commenced its work on 9 July 2012, one week in advance of the meetings of the Council and Assembly, and continued its work until 19 July.
2. The following members of the Commission participated in the meetings during the eighteenth session: Adesina Adegbe, Farhan Al-Farhan, David Billett, Harald Brekke, Winifred Broadbelt, Laleta Davis-Mattis, Kaiser De Souza, Elva Escobar, Russell Howorth, Kiseong Hyeong, Elie Jarmache, Emmanuel Kalngui, Pedro Madureira, Hussein Mubarak, Nobuyuki Okamoto, Mario Oyarzábal, Andrzej Przybycin, Christian Reichert, Cristian Rodrigo, Maruthadu Sudhakar and Haiqi Zhang. The following members informed the Secretary-General that they would be unable to attend the session: Domenico da Empoli, Aleksander Čičerov and Eusebio Lopera. Following past practice, Georgy Cherkashov also participated in the meetings of the Commission prior to his formal election by the Council on 17 July 2012 for the remainder of the term of office of Denis Khramov, who had resigned from the Commission.
3. On 9 July 2012, the Commission elected Russell Howorth (Fiji) as Chair and Christian Reichert (Germany) as Vice-Chair.
4. The Commission adopted its agenda (ISBA/18/LTC/1) on 9 July 2012. On the same date, the Commission was provided with a preliminary briefing on its functions, working practices and anticipated programme of work for the period 2012-2016. In view of its extensive agenda, the Commission decided to prioritize it. It decided first to review the five applications for approval of plans of work for exploration that had been placed on its agenda for the session and then to consider the annual reports of the contractors. Thereafter, if time allowed, it would consider the recommendations for the guidance of the contractors for the assessment of the



possible environmental impacts arising from exploration for polymetallic sulphides in the Area as well as other items on the agenda.

## **II. Applications for approval of plans of work for exploration in the Area**

5. The Commission considered five applications for approval of plans of work for exploration. In accordance with the applicable regulations, the Commission considered the applications in the order in which they had been received, as follows:

- (a) Government of the Republic of Korea (submitted 21 May 2012);
- (b) Institut français de recherche pour l'exploitation de la mer (IFREMER) (submitted 23 May 2012);
- (c) UK Seabed Resources Ltd. (submitted 23 May 2012);
- (d) Marawa Research and Exploration Ltd. (submitted 30 May 2012);
- (e) G-TEC Mineral Resources NV (submitted 31 May 2012).

6. The Commission convened in closed meetings to consider the applications on 9, 10, 11, 12, 13, 16, 17, 18 and 19 July 2012. The report and recommendations of the Commission to the Council relating to each of the applications for plans of work for exploitation are contained in documents ISBA/18/C/15-19.

7. During the consideration of the applications for approval of plans of work for exploration for polymetallic sulphides, the Commission took note of possible future activities in the Area relating to the protection of the marine environment. In this regard, the Commission recalled the obligations under the Convention relating to the protection of the marine environment of the Area (article 145) and relating to the protection and preservation of the marine environment under Part XII, in particular those measures necessary to protect and preserve rare and fragile ecosystems. In regard to the applications for approval of a plan of work for exploration for polymetallic nodules, the Commission noted that there was no overlapping with areas of particular environmental interest in the environmental management plan for the Clarion-Clipperton Fracture Zone (CCZ). The Commission also recalled the obligations under the Convention regarding global and regional cooperation through competent international organizations in formulating and elaborating international rules, standards and recommended practices and procedures, consistent with the Convention, for the protection and preservation of the marine environment (article 197). The Commission noted the international developments regarding the protection and conservation of biodiversity in areas beyond national jurisdiction. Future applications for approval of plans of work should take into consideration the outcomes of those developments.

8. In the same context, the Commission also had to determine whether it should take into account scientific research being conducted at unique hydrothermal vent sites within a block identified for sulphide exploration.

9. The Commission noted that in some of the applications, it had been required to consider the technical capability of subcontractors working for the principal contractor. The Commission also noted that all applications should provide details of subcontractors to be engaged, recognizing that there is a growing trend of using

commercial service companies in providing environmental baseline data. Few service companies have knowledge of the frontier areas of interest to deep-sea mining. The Commission further noted the need to support the standardization workshops organized by the secretariat in order to facilitate the transfer of knowledge from the scientific community to service companies in support of applications for mining.

### **III. Evaluation of the annual reports of contractors submitted pursuant to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area**

10. The Commission reviewed and evaluated, in closed meetings, the annual reports submitted by contractors pursuant to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (Nodules Regulations). To facilitate its work, the Commission was provided with a preliminary analysis of the annual reports prepared by the secretariat (ISBA/18/LTC/CRP.3). The Commission divided itself into five working groups covering geological aspects, environmental aspects, technical aspects, financial aspects and other matters contained in the annual reports. The working groups carried out a preliminary review of the annual reports and prepared a draft evaluation for further consideration by the Commission. The report and recommendations of the Commission concerning the annual reports of the contractors are contained in document ISBA/18/LTC/11.

11. The Commission also made the following comments:

#### **General**

(a) Six out of the nine contractors failed to submit their annual activity reports in a timely manner, which compromises the ability of the organs of the Authority to effectively carry out its functions;

(b) The majority of reports largely follow the general template prescribed by the Commission;

(c) Most contractors are in the final five-year phase of their contracts. By the end of that time it is to be expected that they will have identified a first-generation mine site, obtained good baseline environmental data, developed a mining system prototype and arranged for processing no later than the anticipated end of their respective contracts;

(d) However, the pace of work is not uniform for contractors. Some of the contractors are still engaged in the exploration or environmental phase of the work. Some have not done any work on mining technology or processing technology;

(e) The results of fieldwork (especially with regard to exploration) are in many instances not reported in the detail required and are often not made available in digital format. This is a serious concern of the Commission. The lack of raw data in digital format hinders the Authority in its work as an effective repository of bathymetric, geophysical, geotechnical and chemical data to facilitate further exploration in the Area. In the future, the Commission will put much weight on how the contractors comply with the prescribed and recommended ways of reporting data when considering and recommending new licences;

**Exploration work**

(f) In general terms, exploration work proceeded slowly during the reporting period;

(g) The Commission expresses concern that one contractor has not carried out any exploration activities during the first 10-year period under the contract and as it enters the final 5-year phase. The Commission finds this deeply troubling and invites the contractor to look into this matter accordingly;

(h) Some contractors report no work at all under exploration-, mining- and metallurgy-related activity;

(i) As pointed out in earlier Commission evaluations, there is no uniformity in the classification of nodules on the basis of morphology, shape or size. A standard needs to be established at the earliest opportunity. The Authority should consider convening a meeting of contractors or a workshop for standardization, as noted in paragraph 96 of the report of the Secretary-General (ISBA/18/A/2);

(j) The Commission strongly recommends that the results of the exploration work be reported in digital format and include the following data:

(i) Bathymetry (xyz files) (mandatory);

(ii) Geophysical data (geo-referenced raw data) (requested);

(iii) Nodule abundance (mandatory);

(iv) Chemical analyses (+ methods, analytical accuracy and precision estimates) (mandatory);

**Mining tests and proposed mining technology**

(k) Progress still remains to be made on technology-related issues, particularly with respect to the mining and metallurgical processing of nodules. A few contractors have not yet started to develop their technological capacity. It may therefore be beneficial if such contractors made a concerted effort by pooling their resources;

(l) The contractors who are actively engaged in mining technology research and development should now concentrate on developing a combined mining system and should test their technology at greater depths;

(m) The mineral-processing technology has been tested on a pilot scale by a few of the contractors. The extraction of raw earth elements and other metals from nodules will be of additional value and should be pursued;

**Environmental monitoring and assessment**

(n) The environmental work reported by contractors in 2011 is generally of better quality than that reported in previous years. In response to an appeal during the meeting of contractors in January 2012, several contractors have provided some raw data, which will go a long way in evaluating the potential impact on the marine environment and also in developing the regional environmental management plan for the CCZ. The data will help to evaluate the potential impacts of mining on the marine environment and will help in developing the regional environmental management plan for the CCZ. As environmental data are unclassified, all

contractors should provide the data to the Authority before the start of its next session so that a central environmental database can be developed and strengthened by the Authority;

#### **Financial**

(o) Some contractors have still not provided detailed financial statements for 2009 and 2010 despite the Commission's repeated calls to do so. The Commission invites the Council to consider the matter accordingly;

(p) A positive development in reporting for 2011 is that many of the contractors have provided clarification in response to the Commission's 2011 evaluation report and have made substantial progress towards being compliant with the Commission's financial recommendations as contained in document ISBA/15/LTC/7. Contractors are encouraged to continue with improvements in financial reporting towards full compliance;

#### **Other matters**

(q) Only one contractor has provided a list of research published in peer-reviewed journals during the reporting year. The Commission requests the secretariat to collate a list of publications from all contractors on polymetallic nodules and publish a booklet listing the publications;

(r) Few contractors have continued to analyse the market trend of demand, supply and prices of metals;

(s) In the detailed phase of exploration work, the contractors should consider using advanced techniques such as remotely operated vehicles and autonomous underwater vehicles for producing detailed bathymetric charts and estimating nodule abundances accurately.

12. The Commission agreed on the need to review its reporting to the Council, in particular with regard to the contractors' annual reports, to ensure that they provide sufficient information for the Council to be kept informed and be able to make informed decisions. This review is to be carried out in time for the next session of the Commission.

## **IV. Information on the periodic review of implementation of plans of work for exploration for polymetallic nodules**

13. The Commission was provided with a report by the Secretary-General on the periodic review of the implementation of the plans of work for exploration for polymetallic nodules in the Area (ISBA/18/LTC/10). The review, carried out in accordance with regulation 28 of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, was undertaken with seven of the current contractors. The Commission noted that, in the case of Yuzhmorgeologiya, Interoceanmetal Joint Organization, the Government of the Republic of Korea, China Ocean Mineral Resources Research and Development Association (COMRA), Deep Ocean Resources Development Co. Ltd. and IFREMER, whose contracts were issued in 2001, this was the second periodic review. In the case of the Federal

Institute for Geosciences and Natural Resources of Germany, whose contract was issued in 2006, the first five-year programme of activities expired in 2011.

14. The Commission took note of the status of exploration work being carried out by current contractors as reported in the periodic reviews. The Commission also noted that, as a result of the meeting between the Secretary-General and the contractors held in January 2012, the secretariat has received more raw environmental data from the contractors and measures are being taken (subject to the availability of budgetary resources) to ensure that the data can be analysed, evaluated and standardized so as to facilitate the development of environmental baselines for the next phase of seabed mining.

15. The programmes of most contractors continue to be prolonged scientific research campaigns, without any commercial viability. No contractor has so far informed the Authority that it has made a decision to proceed to conduct test mining in order to evaluate the commercial and environmental risks associated with the mining and processing systems. The Commission recommended that all concerned contractors be requested to undertake, within the next five years, a preliminary economic evaluation of the feasibility of proceeding to exploitation as this would provide an indication of the level of returns that could be generated for any investment in the exploitation of nodules.

## **V. Selection of candidates with a view to the implementation of the training programme**

16. In accordance with the applicable regulations, each contractor is required to draw up a programme for the training of personnel of the Authority and developing States. The training programme is to be drawn up in cooperation with the Authority and the sponsoring State or States and must be submitted to the Authority for approval prior to the commencement of exploration under the contract.

17. The Commission was provided with a report by the secretariat on the status of implementation of the training programmes proposed by COMRA, Nauru Ocean Resources Inc. and Tonga Offshore Mining Ltd., whose applications for approval of plans of work had been approved in 2011. As a first step, the secretariat had invited interested candidates to submit applications for training opportunities with a view to drawing up a roster of qualified candidates. The Commission encouraged the secretariat and other interested stakeholders to continue to seek qualified candidates. The Commission agreed to consider this matter further at its next session and in the meantime to establish a sub-group to prepare a report for its consideration.

18. While the current applicants and contractors had complied with the applicable regulations, the Commission recommended that, pursuant to article 15 of annex III to the Convention, it would assist the Authority if training programmes were elaborated and specifically described in applications for approval of plans of work. It was also noted that it would be helpful to the Secretary-General if the Commission were able to draw up recommendations for the guidance of contractors in devising and implementing training programmes. Such recommendations would help to promote a standardized approach to training. It was agreed to add the consideration of this matter to the work programme of the Commission. The Commission also noted that, pursuant to the regulations, training programmes

should provide for “full participation” by personnel of the Authority and developing States in “all activities covered by the contract”. The Commission expressed the view that the participation of such personnel should extend throughout the duration of the contract.

## **VI. Environmental implication of activities in the Area**

### **A. Report on informal consultations with contractors**

19. The Commission was informed that in January 2012, the Secretary-General had convened an informal meeting with representatives of all current contractors, including environmental experts, in order to address the urgent need for the Authority to update its data management requirements with regard to acceptable data formats for submission to the secretariat of scientific and technical data collected by contractors. The Commission was provided with a report on the outcomes of the informal consultations (ISBA/18/LTC/3). It was noted that a number of specific activities to be undertaken by contractors had been agreed on at the meeting.

20. The Commission also noted that at the meeting a programme of work that would need to be carried out to support the core functions of the secretariat to maintain databases and enable sufficient protection of the marine environment from impacts that may arise as a result of mineral-related activities in the Area had been agreed on. This work included:

(a) A review of the data provided by contractors as a result of the requests prior to and during the meeting and a review of the status of environmental information for the CCZ and Indian Ocean exploration areas;

(b) Redesign of the environmental database to accommodate the new data format and transposition of archive data into the new database;

(c) Integration of metadata sheets with an online Geographic Information System to enable the identification of data collected in the contractor areas, thus enabling the Authority to fulfil its role of promoting and encouraging marine scientific research and international collaboration within the Area;

(d) The convening of taxonomic standardization workshops in order to create consistent species identifications by contractors so that a homogenized database can be created to enable more efficient protection of the marine fauna of the Area.

21. The Commission noted with concern that, as reported by the Secretary-General, there was currently no provision for those activities to be funded from within the current budget of the Authority and that additional resources would be needed. Furthermore, it was noted that the Authority should develop and strengthen scientific collaborations with appropriate groups and organizations in order to advance the understanding of topics relevant to the protection of the marine ecosystems from activities associated with mineral activities in the Area.

**B. Review of the recommendations for the guidance of the contractors for the assessment of the possible environmental impacts arising from exploration for polymetallic sulphides in the Area**

22. The Commission was provided with a set of draft recommendations for the guidance of contractors in the assessment of possible environmental impacts arising from exploration for marine minerals in the Area, including polymetallic sulphides. It was recalled that the Commission had first started work on this matter in 2004, but work was then deferred pending the adoption of the Sulphides Regulations in 2010. The matter had been taken up during the seventeenth session, but the Commission had been unable to complete its work and had tasked a subgroup of environmental experts with continuing to work on the draft during the intersessional period. The present draft was based on the work of the subgroup.

23. The Commission noted with concern that this item had now become extremely urgent since contracts for exploration for polymetallic sulphides had already been issued and contractors were ready to launch their exploration programmes and related environmental baseline studies. It was agreed to take this matter up as a priority at the next meeting of the Commission. In the meantime, the Commission decided to circulate the draft recommendations to the contractors and to invite them to provide any suggestions by 30 November 2012.

**C. Outcomes of the workshop on environmental management needs for exploration and exploitation of deep seabed minerals (Nadi, Fiji, 29 November-2 December 2011)**

24. The Commission received a report on the outcomes of the Authority's workshop on environmental management needs for exploration and exploitation of deep-sea minerals. Insufficient time was available for a comprehensive consideration of the workshop outcomes. The Commission noted that the outcomes would be valuable for much of its pending work.

**VII. Proposed amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area**

25. The Commission recalled that it had been requested by the Council to amend the Nodules Regulations (adopted in 2000) in order to bring them into line with the Sulphides Regulations (adopted in 2010). In line with that request, the secretariat had prepared a document containing proposed amendments in order to align the text of the Nodules Regulations with the text of the Sulphides Regulations. It again noted that this matter was urgent, bearing in mind in particular the need to review the application fee and the environmental provisions of the regulations in the light of anticipated applications for approval of plans of work for polymetallic nodule exploration given increased activities in the Area. The Commission agreed to prioritize this item at its next meeting.



## **VIII. Other matters**

### **A. Environmental management plan**

26. The Commission noted that the Council had intended to continue to consider the environmental management plan for the CCZ submitted by the Commission at the seventeenth session, in 2011. The Commission expressed concern that there may be new urgency in considering the plan given the increasing number of applications being made to the Authority for new licences in the CCZ. It also noted that the plan, which is based on application of the precautionary approach, includes regular reviews to include new knowledge as and when it is generated, allowing the plan to be a living blueprint addressing best environmental practice as it develops.

### **B. Workload and pattern of meetings**

27. The Commission deeply regretted that it had been unable to complete its agenda, as the time available to it was inadequate. While one reason for this was the increased number of applications for approval of plans of work for exploration that the Commission had to consider, owing to growing awareness and interest regarding deep-sea mineral resources in both the public and private sectors, it was also noted that there had been a substantial general increase in the workload of the Commission. The increase in the number of exploration contracts, for example, means that more time is required for the Commission to analyse the annual reports of contractors. The number of annual reports by the contractors to be evaluated will continue to grow. An estimated 17 annual reports are expected for 2013. The Commission also needs time to work on an increasing number of requests from the Council for technical advice or for the formulation of rules, regulations and procedures. Included in this work is the development of the mining code, which is anticipated to take several sessions to complete. Work should start now in order for the Authority to be prepared to deal with anticipated applications for exploitation licences in the near future.

28. Although the Commission expanded the normal meeting time and even met informally on the weekend, the Commission was unable to complete its agenda. In view of the active participation of almost the full membership of the Commission, together with the likelihood that the workload will not diminish in the future, the Commission as a whole took the view that the present allocation of one 8-day session a year was inadequate and that working arrangements should be reviewed in consultation with the secretariat.

29. The Commission was of the view that consideration should be given to holding two sessions in 2013, subject to the availability of resources. As far as possible, the Commission recommended that full services be provided for such meetings so that all members of the Commission could participate on an equal basis. The first session would take place early in the year, enabling the Commission to circulate its recommendations to the Council well in advance of the regular session of the Council. The second session of the Commission would continue to take place the week immediately prior to the session of the Council, as is presently the case.

30. The Commission was of the view that the likely priority items for its next session would relate to:

- (a) The issuance of recommendations for the guidance of the contractors for the assessment of the possible environmental impacts arising from exploration for polymetallic sulphides in the Area;
- (b) The training programmes;
- (c) The alignment of the Nodules Regulations with the Sulphides Regulations;
- (d) The drafting of a mining code.

These items are in addition to the items on new applications for approval of plans of work for exploration and evaluation of the annual reports of the contractors.

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