



# Council

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

### **I. Introduction**

1. The Legal and Technical Commission held two sessions in 2014, from 3 to 13 February and from 7 to 16 July, in total, holding 32 formal meetings.
2. On 4 February 2014, the Commission adopted its agenda for the twentieth session ([ISBA/20/LTC/1](#)). On the same day, the Commission elected Russell Howorth (Fiji) as Chair and Christian Reichert (Germany) as Vice-Chair.
3. The following members of the Commission participated in the two sessions: David Billett, Harald Brekke, Winifred Broadbelt, Georgy Cherkashov, Elva Escobar, Russell Howorth, Kiseong Hyeong, Elie Jarmache, Eusebio Lopera, Pedro Madureira, Nobuyuki Okamoto, Christian Reichert, Maruthadu Sudhakar and Haiqi Zhang. The following members attended the session in July, but were unable to attend the session in February: Emmanuel Kalngui and Cristian Rodrigo. The following members attended the session in February, but were unable to attend the session in July: Adesina Adegbe, Andrzej Przybycin, Domenico da Empoli and Hussein Mubarak. Farhan Al-Farhan did not attend either session. The following members resigned prior to the session in February: Kaiser de Souza, Victor Enrique Marzari, Laleta Davis-Mattis and Aleksander Čičerov. In accordance with previous practice, Carlos Roberto Leite, Juan Pablo Paniego and Michelle Walker participated in the meetings of the Commission following their nomination but prior to their formal election by the Council on 15 July 2014.

### **II. Activities of contractors**

#### **A. Status of prospecting and of contracts for exploration for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts**

4. The secretariat provided the Commission with information on the status of prospecting and of contracts for exploration for polymetallic nodules, polymetallic



sulphides and cobalt-rich ferromanganese crusts in the Area ([ISBA/20/LTC/5](#), [ISBA/20/LTC/9](#) and [ISBA/20/LTC/9/Add.1](#)). The Commission took note of the information provided and also noted that it was anticipated that, by the end of 2014, there would be 26 contracts for exploration, with consequent implications for the increasing workload of the secretariat and the Commission.

## **B. Periodic review of the implementation of the plan of work for exploration by the Government of India**

5. The Commission noted that the final five-year review of the implementation of the plan of work for exploration by the Government of India had been formally concluded by an exchange of letters dated 6 March 2014.

## **C. Consideration of the annual reports of contractors**

6. The Commission considered 13 annual reports submitted by contractors pursuant to section 10 of annex 4 to the Regulations. The list of contractors that submitted annual reports is shown in annex I. The Commission noted that the G-TEC Sea Mineral Resources NV did not submit an annual report in 2014, in accordance with an understanding made upon signature of the contract, owing to the fact that the sponsoring State had not authorized the contractor to commence its activities until domestic legislation was in place. In accordance with past practice, the annual reports of the contractors were made available to members of the Commission through a secure website and the secretariat undertook a technical evaluation of the reports, which included a detailed analysis of the contractors' activities, which assisted the work of the Commission. In considering the reports, the Commission divided itself into three working groups on (a) environmental matters, (b) legal and financial matters and training, and (c) technical matters, in order to undertake a detailed examination of the annual reports, on which the Commission provided a report to the Secretary-General.

7. General comments for the Council on the contractors' annual reports are contained in annex I to the present report. The Commission noted that the majority of reports followed in large part the general format prescribed by the Commission, and generally focused on work carried out during the reporting year under consideration, in accordance with the suggestions made by the Commission after previous evaluations. A few reports reviewed work from earlier years. Six of the seven pioneer contractors will complete the final five-year phase of their respective contracts in 2016. By that time it is expected that they will have identified a first-generation mine site, obtained good baseline environmental data, developed a mining system prototype and arrangements for processing of nodules. Five of those contractors have reported different stages on mining tests and selection of sites in their respective areas.

8. The Commission noted that its recommendations for the guidance of contractors for the reporting of actual and direct exploration expenditures as required by annex 4, section 10, of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area<sup>1</sup> (Nodules Regulations) had been issued before

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<sup>1</sup> ISBA/6/A/18, annex as amended by ISBA/19/C/17.

the adoption of the Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area<sup>2</sup> (Sulphides Regulations) and of the Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area<sup>3</sup> (Crusts Regulations) and before the conclusion of contracts for exploration of sulphides or crusts. As a result, the Commission noted that there was a need to update the recommendations to cover contracts for exploration for sulphides and crusts.

9. The Commission also noted that there was a need to review the recommended template for annual reports, which had been adopted by the Commission in 2002. It was decided to take these matters up at the next session.

#### **D. Extensions of contracts for exploration**

10. The Commission noted that seven contracts for exploration for polymetallic nodules were due to come to an end between March 2016 and March 2017. In this regard, the Commission noted the need to anticipate the fact some contractors may not be in a position to proceed to exploitation by 2016, and may therefore seek an extension of their current exploration contracts. It was noted that the first applications for extension could be anticipated in September 2015.

11. The secretariat provided the Commission with a preliminary review of the relevant provisions of the regulations and standard clauses relating to the termination and possible extension of such contracts (ISBA/20/LTC/8). The Commission was concerned about the possibility of a number of procedural and substantive problems arising in connection with the implementation of clause 3.2 in the standard contract for exploration. The Commission took note of the analysis presented by the secretariat, on the basis of which the Commission decided that it should draw the attention of the Council to the implications of anticipated applications for extension of contracts for exploration and of the urgent need to provide necessary criteria and procedural aspects regarding the implementation of the relevant provisions of the regulations.

12. The Commission decided to recommend to the Council, pursuant to article 165, paragraphs 2 (a) and (g) of the Convention, that the Commission be requested, as a matter of priority, to formulate draft procedures and criteria for applications for extensions of contracts for exploration, for consideration by the Council at its next session in July 2015.

#### **E. Implementation of training programmes under plans of work for exploration and allocation of training opportunities**

13. The Commission was informed that a total of five training places had been made available by Japan Oil, Gas and Metals National Corporation (JOGMEC) and the Ministry of Natural Resources and Environment of the Russian Federation pursuant to their contracts for exploration with the Authority. A total of 52 candidates on the roster were eligible for both training programmes, while 32 candidates had

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<sup>2</sup> ISBA/16/A/12/Rev.1, annex.

<sup>3</sup> ISBA/18/A/11.

been nominated specifically for the JOGMEC training programme. A total of 17 candidates had confirmed their availability for the Russian training programme.

14. A working group was established to review the training applications in detail. The group then reported back to the full Commission, which decided to recommend five first-ranked candidates and ten alternate candidates, ranked by preference, for the respective training programmes. The selection of candidates was based on considerations of overall qualification of the candidates, including education, working experience, language proficiency, seagoing experience, reasons for seeking training, expected benefit to the nominating Government and other merits embodied in the application and nomination forms, and the requirements stated by the contractors. Subject to these considerations, due regard was also paid to equitable geographical distribution of training opportunities and gender balance.

15. The Commission also decided to streamline the trainee selection and approval process, in response to receiving notice of training opportunities at short notice, outside the regular meetings of the Commission. A full report on the selection process and the names of the recommended candidates, as well as the streamlined procedures are contained in document [ISBA/20/LTC/13](#).

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

16. The Commission considered in closed meetings the seven applications for approval of plans of work for exploration that are listed in annex II to the present report. The applications were considered in the order in which they had been submitted.

17. At the session in February, the Commission resumed its consideration of the applications for approval of plans of work for exploration by the Ministry of Natural Resources and Environment of the Russian Federation, UK Seabed Resources Ltd., the Government of India and by Ocean Mineral Singapore Pte Ltd. that had been deferred from the nineteenth session. The Commission was able to conclude its consideration of these applications and adopted recommendations to the Council in respect of each application which are contained in documents [ISBA/20/C/4](#), [ISBA/20/C/5](#), [ISBA/20/C/6](#) and [ISBA/20/C/7](#).

18. In December 2013 applications for approval of plans of work for exploration were submitted by the Federal Institute for Geosciences and Natural Resources of Germany (polymetallic sulphides), Cook Islands Investment Corporation (polymetallic nodules) and Companhia de Pesquisa de Recursos Minerais S.A. (cobalt-rich ferromanganese crusts). These were placed on the agenda of the Commission for the twentieth session.

19. At its meeting in February 2014, the Commission heard presentations of each of the three new applications. Following the presentations, the Commission considered each of the applications in turn and submitted a list of questions to each applicant, based on its initial consideration. The responses to the questions posed to applicants were considered at the July meeting, following which the Commission adopted its report and recommendations to the Council in respect of each of the three applications, as contained in documents [ISBA/20/C/16](#), [ISBA/20/C/17](#) and [ISBA/20/C/18](#).

## **IV. Preparation of draft regulations for exploitation in the Area**

20. In line with the request of the Council (ISBA/17/C/21, para. 20), the Commission continued its preparatory work on the formulation of regulations for the exploitation in the Area.

21. At its meetings in February 2014, the Commission considered a detailed technical study on the development of a financial regime for deep-sea mineral exploitation. The study identified the policy objectives and the financial principles flowing from the Convention and the Agreement, respectively, relating to the financial regime. The study presented a review of comparable mechanisms from different mining regimes, highlighting the range of rates of payment and calculation methodologies. The Commission also discussed current best practice with regard to applicable fiscal regimes and considered mechanisms that may be comparable to the policy and financial objectives of the Authority. Conscious of the magnitude of issues still requiring clarity at this preliminary stage, the Commission formulated and agreed on the terms of reference of a survey seeking the views of all the stakeholders of the Authority.

22. The Commission continued its discussions in July, at which time it also had the benefit of the responses to a stakeholder survey launched by the secretariat in March 2014 aimed at soliciting relevant information for the development of a regulatory framework for the exploitation of minerals in the Area from members of the Authority and other stakeholders. The Commission noted that the survey, which members of the Commission had assisted the secretariat to compile, contained 34 questions focusing on the following four thematic areas: financial terms and obligations; environmental management terms and obligations; health and safety and maritime security; and general considerations on stakeholder communication and transparency. The objective of the survey was to enable the Authority to gain further insight into the current thinking of stakeholders, to identify and prioritize issues requiring further detailed consideration and to formulate a working methodology to address those issues as it continues to develop the regulatory framework. The Commission was provided with a detailed analysis of the 55 responses to the survey that were received, noting that there were 20 responses from Governments, 9 from contractors, 13 from non-governmental organizations, 10 from public and private entities and 3 from private citizens.

23. To prepare for its next meeting, the Commission requested the secretariat to prepare a possible draft framework of the regulations for exploitation. In that regard, the Commission noted with appreciation the work of the secretariat and its external consultants, which had contributed to the excellent progress made during 2014 and emphasized the need for time and resources to continue to be made available to support its work on the draft regulations.

## **V. Matters referred to the Commission by the Council**

### **A. Proposed amendments to regulation 21 of the Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area**

24. As requested by the Council during the nineteenth session, the Commission considered aligning the fee provision in the Nodules Regulations with the fee provisions in the Sulphides Regulations and in the Crusts Regulations which were not consistent. The Commission made a recommendation to the Council that

regulation 21 be amended to that effect. The recommendation of the Commission is contained in document [ISBA/20/C/9](#).

## **B. Analysis of regulation 11.2 of the Regulations on Prospecting and Exploration for Polymetallic Nodules and Polymetallic Sulphides in the Area**

25. As also requested by the Council in its decision [ISBA/17/C/20](#), the Commission carried out an analysis of regulation 11.2 of the Nodules Regulations and the Sulphides Regulations which relate to the certificate of sponsorship. In doing so, the Commission observed that regulation 11.2 of the Crusts Regulations was identical in terms and that its analysis therefore extended to that provision also. To assist its analysis the Commission was provided with a background document prepared by the secretariat ([ISBA/20/LTC/10](#)).

26. The Commission noted that regulation 11.2 concerned the form and content of the certificate of sponsorship and set out the criteria and procedures for implementing the requirement of sponsorship by States parties as contained in article 153 and article 4 of annex III to the Convention. Those articles stipulate that, in order to carry out activities in the Area, natural and juridical persons must satisfy two requirements: firstly, they must be nationals of a State party or effectively controlled by a State party or its nationals; secondly, they must be sponsored by one or more States parties to the Convention.

27. The Commission observed that the decision to sponsor an entity that otherwise possesses the necessary qualifications was left to the discretion of the relevant State party or States parties. That implied that the onus was on the sponsoring State to ensure that the entity to be sponsored satisfied the two above-mentioned criteria before it made a decision to sponsor. The Commission also noted that the Convention required the certificate of sponsorship as evidence of the decision to sponsor by the State or States of nationality and of effective control. In addition, the Commission noted that there was no single definition of the expression “effective control” in international law and that the meaning varied considerably depending on context. Conditions and standards defining effective control fell under the competence of the State that exercised it. Thus, it was left to the sponsoring State to elaborate on such conditions to grant its sponsorship within its domestic legal system, should it find it appropriate to do so. The Commission further noted that the Part XI regime, as well as other legal contexts, used the same critical criteria of incorporation, registration and granting of nationality (i.e. regulatory control) to determine effective control. That meant that, at least in relation to entities incorporated in or having the nationality of a sponsoring State, the act of incorporation, or the conferring of nationality, combined with the undertakings given as a sponsoring State, would seem to be sufficient to establish “effective control” for the purposes of satisfying the sponsorship conditions.

28. The Commission stressed that information relating to the certificate of registration and the identification of the principal place of business and domicile of an applicant, together with the certificate of sponsorship, were critical for the Commission to satisfy itself that an applicant met the sponsorship requirements. In the light of those observations, the Commission came to the conclusion that any development of the conditions for the granting of sponsorship in the context of the

Part XI regime would seem more appropriately addressed in the context of domestic laws, if a sponsoring State found it necessary.

29. The Commission believed that it would not be necessary or advisable to further develop the current regulation 11.2.

### **C. Issues relating to monopolization of activities in the Area**

30. In accordance with the request of the Council that it give further consideration to the issue of monopolization of activities in the Area, the Commission considered the issue of the possible alignment of the Nodules Regulations with the Sulphides Regulations and the Crusts Regulations. After a full discussion, and in the light of the background information provided by the secretariat ([ISBA/20/LTC/11](#)), the Commission decided to recommend to the Council that the Nodules Regulations be aligned with the equivalent provision in the Sulphides and Crusts Regulations. The recommendation of the Commission in that regard is contained in annex III to the present report.

31. In relation to this agenda item, the Commission commenced its consideration in February 2014 and continued at its July 2014 meeting. At the conclusion of the July meeting, the Commission agreed that there appeared to be emerging a new way of doing business insofar as applications for plans of work for exploration were concerned, which was compliant with the regulations. The Commission was of the view that this needed to be brought to the attention of the Council at the present time. In doing so, the Commission informs the Council that it will continue to keep this matter on its agenda, and the Council may wish to consider providing further guidance.

### **D. Issues relating to the operation of the Enterprise, in particular on the legal, technical and financial implications for the Authority and for States parties**

32. The Commission recalled that, during the nineteenth session, the Council had requested the Secretary-General, referring where appropriate to the Commission and the Finance Committee, to carry out a study of the issues relating to the operation of the Enterprise, in particular on the legal, technical and financial implications for the Authority and for States parties to the United Nations Convention on the Law of the Sea, taking into account the provisions of the Convention, the 1994 Agreement relating to the implementation of Part XI of the Convention and the regulations on prospecting and exploration for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area.

33. The Commission considered a note by the secretariat ([ISBA/20/LTC/12](#)), in which the secretariat explained that it had not been possible to complete the study as requested by the Council, but that draft terms of reference that had been prepared would enable the secretariat to start work on some of the elements of the study.

34. In the discussion on the issue, it was recalled that the Council had decided in 2013 that it was premature for the Enterprise to function independently of the secretariat. It was also recalled that the evolutionary approach set out in the 1994 Agreement applied to the functioning of all organs of the Authority. The point was

also made that the Regulations allowed exploration contractors to elect to offer the Enterprise an equity interest in a joint venture arrangement in lieu of a reserved area, such election to take effect at the time the contractor entered into a contract for exploitation. However, the terms and conditions upon which such equity participation may be obtained needed to be further elaborated on. For that reason, as well as the fact that the Enterprise was required to conduct its initial deep seabed mining operations through joint ventures, the question of joint venture arrangements was crucial and should be addressed in the study.

35. The Commission took note of the information provided by the secretariat and also made preliminary observations on the draft terms of reference for the study requested by the Council. In recognition of the complexity of the issues, as well as the relative priority to be given to those matters, it was also suggested that the secretariat follow an incremental approach in carrying out the various components of the study. In the first instance, priority should be given to identifying gaps, if any, in the current regulatory and procedural regime and suggesting ways, including the formulation of appropriate regulatory and procedural measures, to ensure proper and independent operations of the Enterprise, and identifying the gaps, if any, in existing general policies of the Assembly that were relevant to the operation of the Enterprise. The Commission decided to keep the matter on its agenda for the twenty-first session in 2015, at which time it would consider further the draft terms of reference and any update provided by the secretariat.

## **VI. Conflict of interest**

36. The Commission thanked the secretariat for the guidance provided on the issue of conflict of interest in response to a request made during the nineteenth session. The Commission considered the guidance and agreed that the provisions of rule 11 of its rules of procedure, together with the written undertaking signed by each member upon joining the Commission, were satisfactory. The Commission emphasized that it was primarily incumbent on each member of the Commission to ensure that he/she complied with the obligations set out in the Convention in the interest of transparency and accountability and the evolving workload of the Commission.

## **VII. Status of implementation of the environmental management plan for the Clarion-Clipperton Zone**

37. The Commission met in an open session on 15 July 2014 to review the status of the implementation of the environmental management plan for the Clarion-Clipperton Zone adopted in 2012 for a period of three years. The Commission was provided with a preliminary report commissioned by the secretariat and noted that most of the recommendations in the report were aimed at the secretariat and could be taken into consideration as necessary by the secretariat in preparation for the review and next phase of implementation of the plan. The secretariat took note of the various comments and suggestions made by members of the Commission in connection with the next phase of implementation of the plan. The Council is invited to take note of the status of implementation of the plan and to encourage the secretariat and the Commission to continue their work up to and beyond 2015.



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## **VIII. Data-management strategy of the Authority**

38. The secretariat made a presentation to the Commission on the development of a global deep sea database. The Commission took note with appreciation of the work being undertaken by the secretariat to improve the data-management capacity of the Authority and in particular highlighted the need to incorporate geological data as well as environmental data. The Commission noted that the next phases of the database development would require resources to be allocated in order to validate all environmental and geological data through, inter alia: further data exchanges with the contractors; the securing of the services of a database manager; data modelling; database updating; and maintaining the quality assurance and control of all phases of the database development. The Commission asked the secretariat to provide a further progress report on this important matter at its next meeting and to make the topic of data management a regular item on its agenda.

## **Annex I**

### **General comments of the Commission on the annual reports of the contractors**

Annual reports were submitted as follows:

Polymetallic nodules: Yuzhmorgeologiya, Interoceanmetal Joint Organization, Government of the Republic of Korea, China Ocean Mineral Resources Research and Development Association, Deep Ocean Resources Development Co., Ltd., Institut Français de Recherche pour l'exploitation de la mer, Government of India, Federal Institute for Geosciences and Natural Resources of Germany, Tonga Offshore Mining Limited, Nauru Ocean Resources Inc. and UK Seabed Resources Ltd.

Polymetallic sulphides: Ministry of Natural Resources and Environment of the Russian Federation, China Ocean Mineral Resources Research and Development Association.

#### **General comments**

1. The majority of reports largely follow the general format prescribed by the Commission, and generally focused on work carried out during the reporting year under consideration, in accordance with the suggestions made by the Commission after previous evaluations. A few reports reviewed work from earlier years.
2. Six of the seven pioneer contractors will complete the final five-year phase of their respective contracts in 2016. 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 arrangements for processing. Five of those contractors have reported different stages on mining tests and selection of sites in their respective areas.

#### **Exploration work**

3. Most contractors fulfilled the activities planned in their working plan and are directly related to field work carried out the previous year of reporting.
4. The Commission noted that high-resolution maps (2 x 2 m) are being generated using multibeam acoustic measurements by most of the contractors. It was also noted that first-generation mining sites have been defined by some contractors.
5. Few of the contractors have made considerable progress in developing and testing tools for both nodules and sulphides exploration.
6. Geo-acoustic survey linked to natural electric potential measurements proved to be a reliable approach to map the polymetallic sulphide deposits.
7. The Commission recognizes the efforts made by contractors to deliver exploration data to the Authority in accordance with the standard formats.
8. The Commission also recognizes the need for a better template for standardized reporting to the Authority regarding exploration data. The reporting of nodules and sulphides chemical data based on statistics remains valid, but tables with the full chemical analyses should be provided in digital format.

9. A big effort on assessment and reporting resource and reserve estimates should be pursued.

#### **Mining tests, mining technology and metallurgical processes**

10. Metallurgical processing has been reported by some contractors using different processes (leaching) with high recoveries for selected elements, such as Cu, Ni, Co, Zn, Au and Ag, as well as for rare earth elements through ion exchange resin techniques.

11. 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 yet to begin to develop their technological capacity and it may therefore be beneficial if such contractors made a concerted effort by pooling their resources.

#### **Environmental monitoring and assessment**

12. The environmental work reported by contractors in 2014 is generally of better quality than that reported in previous years. However, there is still a lack of raw tabular data, as well as detailed taxonomic information (preferably at species level) being provided by contractors. In a few cases there are no geographic reference data reported for the environmental data. Raw tabular data are essential for evaluating potential cumulative and regional impacts on the marine environment. They are also required for the development of the Authority's data management strategy for developing the environmental management plans.

13. The Commission recommends that contractors provide a summary table for the environmental baseline data in the future annual reports. The table should be formulated to itemize environmental baseline data that have been collected in the reporting year and through the contracting periods in separate columns, in reference to the environmental variables that are listed in the recommendations for the guidance of contractors ([ISBA/19/LTC/8](#)). It facilitates the evaluation of the progress in the contractors' environmental monitoring programme and would help contractors to find gaps in their environmental baseline study. The template for the table was developed in the consultation meeting between contractors and the secretariat in January 2012.

14. Contractors are required in some cases to provide and agree with the International Seabed Authority before operations commence an Environmental Impact Assessment for certain types of equipment. This applies particularly for operations relating to polymetallic sulphides on ocean ridges and cobalt-rich ferromanganese crusts on seamounts. The Commission welcomed with appreciation the submission of the first environmental impact assessment prior to dredging operations by one contractor.

15. Several contractors have expressed their appreciation for the Authority's taxonomic and standardization workshops. It is evident that there is considerable variability in the reporting of environmental data by contractors. The taxonomic and standardization workshops are essential to improving data quality and all contractors should attend them.

16. Some contractors have generated high-quality molecular data on seabed fauna which indicate the degree of change in species across the Clarion-Clipperton Zone.

The data support the transregional planning of areas of particular environmental interest, but also indicate that for some taxa additional spatial planning may be required.

17. Contractors undertake as part of their contractual obligations to verify that field activities during exploration are not causing serious environmental harm. Consideration needs to be given by each contractor, especially those working on polymetallic sulphides and cobalt crusts, of how this can be achieved and reported following each cruise.

### **Financial statements**

18. Most contractors have provided a breakdown of expenditure, as recommended in the document [ISBA/15/LTC/7](#). The majority of contractors submitted their financial statements for the 2013 period in a timely and itemized manner. The total amount spent by contractors was \$80.4 million. This is an improvement that was noted by the Commission. It was also noted that half of the contractors have spent more than anticipated in their projected five-year working plan schedule. In this regard, the Commission encourages all contractors to advise and provide further details in the future, whenever there are significant variations in their expenditures vis-à-vis the amounts set forth in their plans of work.

### **Training programme**

19. Most of the contractors report “no training activity”, as they are in the final five-year period of their contracts, and report their designated training as having been completed, in some instances, nearly a decade ago. The Commission would like contractors to consider additional training activities in order to increase the capacity-building carried out in line with regulation 27 of the Nodules Regulations, which provide for revision and development of training programmes from time to time by mutual agreement. It would also like contractors to take into consideration the suggestions set forth in the Recommendations for the guidance of contractors and sponsoring States relating to training programmes under plans of work for exploration ([ISBA/19/LTC/14](#)), in order to provide for the training equivalent of at least 10 trainees as a minimum, by mutual agreement, during each five-year period of the contract.

### **Other matters**

20. Few of the contractors have provided a list of research published in peer-reviewed journals during the reporting year.

21. Few examples currently exist of any collaborative work between contractors. Although several of the contractors mentioned the usefulness of the standardization workshop organized by the International Seabed Authority in Germany in 2013, an effort should be made to encourage greater levels of collaboration by sharing manpower and resources among contractors.

22. A positive trend observed during the reporting period is that some of the contractors have started analysing data on the economic feasibility of nodule mining, and that some of them are providing limited information on mineral resource classification.

**Annex II****List of applications considered by the Commission during the twentieth session of the Authority**

<i>Applicant</i>	<i>Sponsoring State</i>	<i>Date of application</i>	<i>Resource</i>
Ministry of Natural Resources and Environment of the Russian Federation		6 February 2013	Cobalt-rich ferromanganese crusts
UK Seabed Resources Ltd.	United Kingdom	8 February 2013	Polymetallic nodules
Government of India		26 March 2013	Polymetallic sulphides
Ocean Mineral Singapore Pte Ltd.	Singapore	19 April 2013	Polymetallic nodules (reserved area)
Federal Institute for Geosciences and Natural Resources, on behalf of the Federal Republic of Germany	Germany	17 December 2013	Polymetallic sulphides
Cook Island Investment Corporation	Cook Islands	27 December 2013	Polymetallic nodules (reserved area)
Companhia de Pesquisa de Recursos Minerais	Brazil	31 December 2013	Cobalt-rich ferromanganese crusts

## **Annex III**

### **Suggested amendments to regulation 21 of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area**

#### **Regulation 21 Consideration by the Legal and Technical Commission**

6. bis The Legal and Technical Commission may recommend approval of a plan of work if it determines that such approval would not permit a State Party or entities sponsored by it to monopolize the conduct of activities in the Area with regard to polymetallic nodules or to preclude other States Parties from activities in the Area with regard to polymetallic nodules.

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