Developing a Regulatory Framework for Deep Sea Mineral Exploitation in the Area

Draft framework, High level issues and Action plan, Version II 15 July 2015 (Reviewed and revised for Stakeholder responses to the *Report to Members of the Authority and all stakeholders* issued 23 March 2015).

Content

1. Draft / working framework for the Exploitation Regulations

Glossary of abbreviations

APEIs	Areas of particular environmental interest
BEP	Best environmental practice
DSM	Deep seabed mining
EIA	Environmental impact assessment
EIS	Environmental impact statement
EITI	Extractive Industries Transparency Initiative
EMP	Environmental management plan
EMS	Environmental management system
IRZ	Impact reference zone(s)
PRZ	Preservation reference zone(s)
RRPs	Rules, regulations and procedures (of the Authority)
SEIA	Strategic environmental impact assessment
SEMP	Strategic environmental management plan

Working structure for Exploitation Regulations

Title

Preamble

- Objectives & overarching principles / purpose

Part I – Introduction

- Use of terms and scope

Part II – Applications for approval of plans of work for exploitation in the form of contracts

- *General provisions*
- *Content of applications*
    - Form of applications
    - Certificate of sponsorship
    - Financial & technical capabilities
    - Previous contracts with the Authority
    - Undertakings
    - Applications for approval of plans of work with respect to a reserved area
    - Equity interest in a joint venture arrangement
    - Data and information to be submitted for approval of the plan of work for exploitation
    - Feasibility study
    - Environmental impact statement
    - Environmental management plan
    - Social impact assessment and action plan
    - Financing plan
    - Closure plan
    - Size and location of exploitation area covered by the plan of work
- *Fees*
    - Fee for applications
- *Processing of applications*
    - Receipt, acknowledgement and safe custody of applications
    - Public review of the Environmental impact statement and Environmental management plan [and Social impact assessment and Closure plan]
    - Consideration by the Legal and Technical Commission
    - Consideration and approval of plans of work for exploitation by the Council
    - Independent technical expert working group(s) / sub-committees

Part III – Contracts for exploitation

- The contract
- Rights of the contractor
- Obligations of the Authority
- Legal title to minerals
- Duration of contracts / renewal
- Performance requirements
- Avoidance of unnecessary waste in respect of the resources of the Area
- Use of sub-contractors
- Vessels operating in the Area
- Protection of submarine cables and pipelines

- Health and safety
- Training
- Periodic review of the implementation of the plan of work for exploitation
- Termination of sponsorship
- Responsibility and liability

Part IV – Protection and preservation of the marine environment

- Protection and preservation of the marine environment
- Environmental management
- Emergency orders
- Strategic environmental management plan
- Rights of coastal States
- Environmental bonds and performance guarantees
- Restoration and rehabilitation of the marine environment
- Adaptive management approach
- Seabed sustainability fund
- Environmental liability trust fund
- Human remains and objects and sites of an archaeological or historical nature

Part V – Confidentiality

- Confidentiality of data and information
- Procedures to ensure confidentiality

Part VI – General Procedures

- Notice and general procedures
- Recommendations for the guidance of contractors
- Duty to co-operate

Part VII – Enforcement, offences and penalties

1. Inspection
2. Offences & penalties

Part VIII – Settlement of disputes

- Disputes

Part IX – Other mineral resource categories

Part X – Review

Annexes to exploitation regulations

Annex I – Application for approval of a plan of work for exploitation to obtain a contract

Annex II – Standard clauses for exploitation contract plus schedules

Draft regulation description	Specific elements	Commentary / suggested content	Actions for operationalization of draft regulation
Preamble	Objectives & overarching principles / purpose.	The Exploration Regulations contain a short preamble. It will be helpful, if not crucial to include further wording to setout the clear objectives and intention for the exploitation regulations, which should include the policy objectives of the Convention and the 1994 Agreement. The preamble is simply to put the framework into context and its overall aims and goals.	To be drafted.
Part I Introduction			
Use of Terms and scope	Definitions applicable to the exploitation regime.	The Exploration Regulations[2] contain relatively few terms and definitions. It is likely that the Exploitation Regulations will include more comprehensive definitions to aid interpretation. These will include those already presented in the Exploration Regulations, save as amended to reflect current practice. This section is considered a high priority by a number of stakeholders.	This section will evolve as the regulatory framework evolves. Definitions should reflect internationally agreed and accepted definitions where possible. Work should commence on this section as soon as possible albeit some terms and definitions may need to be defined at later date as the framework evolves.

[1] Description corresponds to that contained in the Exploration Regulations, save for any new, proposed regulatory provision.
[2] Refers to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (PN Exploration Regulations), ISBA/19/C/17, 22 July 2013.

Part II Applications for approval of plans of work for exploitation in the form of contracts

General	Defines the entities that may apply for a plan of work for exploitation.	• Use wording identical to that contained in the Exploration Regulations.	• Not applicable.
Form of applications	Defines requirement for a plan of work in a form to be prescribed in Annex I.	▪ Wording in Exploration Regulations remains relevant, however:- ▪ Should a "plan of work for exploitation" cover multiple exploitation areas, within say the area covered under an existing contract for exploration? ▪ Each distinct area of exploitation may have different physical characteristics and environmental conditions. ▪ Options available to the Authority: (1) to request separate plans of work for exploitation where there are "material" differences between "exploitation areas" and / or (2) to request separate documents (Feasibility study, Environmental impact statement (EIS) and Environmental management plan (EMP)) for each exploitation area (as ultimately defined). ▪ A number of diverging views have been expressed by stakeholders here. Comments made include: that determining "material differences" may be subjective (unless clear and objective criteria can be set); that separate plans of work may involve an unncessary cost burden and that there should be a separate plan of work unless it can be demonstrated two individual areas are "sufficiently similar" in terms of scale of	• *Guidelines for the Preparation of a Plan of Work for Exploitation* need drafting, including a standard application form. • Future development / licensing of an online application management system. • Thought to be given to "new ways of doing business" as highlighted by the Commission in the context of exploration and its impact(s) on exploitation applications.[3]

[3] See *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*, ISBA/20/C/20, 16 July 2014 at para 31.

		operations,environmental baseline conditions etc. This framework element requires further consideration and a need to anticipate "new ways of doing business".	
Certificate of sponsorship	Defines the requirement for a certificate of sponsorship.	• Use wording identical to that contained in the Exploration Regulations.	• Not applicable.
Financial and technical capabilities	A key provision for the delivery of due diligence information about an applicant.	• Much of the wording reflected in the Exploration Regulation can be retained. • However, a greater level of detail will be required to evaluate "financial capability" and "technical capability" in connection with the delivery of a plan of work for exploitation, including the capability to deliver approved development and production requirements and the delivery of EMP obligations. • Evaluation criteria needed for the Commissions' assessment procedures. • To consider how this regulation is to be applied uniformly across all contractor entities particularly financial capability in relation to States and the extent to which this should be assessed to ensure uniform application / transparent & uniform enforcement.[4] • Health and safety to be included in technical capabilities.	• Further best practice to be developed from national regimes and suggestions in the Stakeholder Survey. • *Guidelines for the Preparation and Evaluation of Information relating to Financial capability and Technical capability* to be drafted.
Previous contracts with the Authority	Content of Exploration Regulation can be retained.	• Details of existing contract(s) for exploration is important in establishing a "preference and a priority" in an applicant's plan of work for exploitation.[5] • Any assessment process to consider that deliverables and	• The term "preference and priority" must be clarified.

[4] Note: Annex III, Article 4(5) that "[t]he procedures for assessing the qualifications of States Parties which are applicants shall take into account their character as States.

[5] Regulation 24(2) PN Exploration Regulations states: "A contractor who has an approved plan of work for exploration only shall have a *preference and a priority* among applicants submitting plans of work for exploitation of the same area and resources".

		obligations under a contract(s) for exploration have been observed. • Concern has been expressed by some stakeholders over the exact nature of a "preference and priority" under the Exploration Regulations and the transferring of this "exploitation priority" to an exclusive exploitation right and the procedures associated with this.	
Undertakings	Specific undertakings contained in Annex III, Article 4(6) of the Convention.[6]	• Use wording identical to that contained in the Exploration Regulation. However, this maybe an opportunity to modify or clarify undertakings fundamental to delivery of plan of work / contractual obligations? • Could be used to include specific and fundamental contract terms, for example in respect of unfair economic practices anticipated by Annex, Section 6(1)(b) of the Agreement[7], including disclosure of anti-competitive practices and the obligation to pay fees and royalties etc. General consensus by stakeholders that amended wording would be appropriate.	• Council could consider incorporating additional undertakings particularly in connection with uneconomic practices. LTC to make recommendations on suitable wording. • A technical working paper requires preparation by an expert familiar with the international trade issues raised by Annex, Section 6(1)(b) of the Agreement and specific RRPs drafted as required by Section 6(6).[8] To consider how other regimes have handled this area.

[6] United Nations Convention on the Law of the Sea.
[7] Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982.
[8] Under Section 6(6) of the Agreement, the Authority is obliged to "develop, rules, regulations and procedures which ensure the implementation of the provisions of this section, including relevant rules, regulations and procedures governing the overall approval of plans of work".

Applications for approval of plans of work with respect to a reserved area	Wording in the Exploration Regulations *appears* to suffice.	• To consider wording in the light of the timing and operationalization of the Enterprise.	• Not applicable (at this stage).
Equity interest in a joint venture arrangement	Wording in the Exploration Regulations *appears* to suffice.	• Again, to consider wording in the light of the timing and operationalization of the Enterprise.	• *Action plan for operationalization of the Enterprise* to be developed.
Data and information to be submitted for approval of the plan of work for exploitation	This draft regulation should outline the documents, information and other data required for an application.	• Documents that would typically[9] be supplied in support of a plan of work for exploitation could include: i. Feasibility study (or report); ii. Environmental impact statement (EIS); iii. Environmental management plan (EMP); iv. Social impact assessment / statement and action plan (this may be integrated into the EIS above); v. Financing plan; vi. Closure plan; vii. Training plan / programme; viii. [Emergency response and procedures plan: although not normally a separate document as it would be reflected elsewhere, given the concept of "emergency orders" this could be provided as a separate document]; ix. [Health, safety and maritime security plan: again this can be integrated into the EIS].	• See *Guidelines for the Preparation of a Plan of Work for Exploitation* above. • See also individual document draft regulations following.

[9] "Typically" refers to those documents usually supplied under a land-based mining regime. See for example, *Model Mine Development Agreement*, International Bar Association (2011).

		• See also "Form of applications" above concerning separate documents or separate plans of work.	
Feasibility study	Content and structure to be defined for exploitation activities.	• Content to be adequate to assess commercial viability of proposed exploitation activities by exploitation area. But what is role of Authority in assessing "commercial viability"? How would "commercial viability" be defined? • To be prepared in accordance with good mining industry practice and based on sound engineering and economic principles and accompanied by a report of a suitably qualified person(s),[10] including mining engineer (qualifications, criteria and mechanism for choice to be defined / clarified). • As part of the application process, alternative development or production plans may be requested to ensure the optimization (including timing) of proceeds of commercial production. Comment has been made that any "right" for the ISA to request alternative development or production plans should be removed; this is considered a purely commercial judgment and that the ISA is not qualified to substitute its judgment. Perhaps this point can be discussed as part of the overall role of the Authority as a regulator. It may be appropriate that the Authority retain the right to request alternative plans and perhaps explain in a regulatory policy or guidance document the circumstances where this request may be made and the rationale for any such request. • Should also reflect environmental considerations: e.g. the impact of required research, mitigation and monitoring etc	• *Guidelines for the Preparation and Evaluation (criteria) of a Feasibility study* to be drafted. • Have any "blueprint" feasibility studies been developed for DSM activities that can be adopted by the Authority?[11] (To ensure consistency and comparability in applications). • Perhaps recognize that a "bankable" feasibility study may not be available until the industry is proven at a commercial scale.

[10] This will be defined under "Use of terms and scope" and should include reference to an internationally recognized mining consulting firm. The LTC consider that a third party report and verification by a suitably qualified person, being a person(s) independent of an applicant contractor, is a mechanism that will assist the LTC with its initial application assessment workloads.

[11] Blue Mining is developing blueprints for feasibility studies. Also see outline content in ISA Technical Study No. 11.

		on overall economic feasibility. That is, a feasibility study should address the overall sustainability of a project.	
Environmental impact statement (EIS)	Content of EIS to be further defined / finalised and be resource-category specific.[12]	• An EIS should be, *inter alia* i. Based on the Environmental impact assessment (EIA), on "sound engineering and economic principles" and good mining industry practice, the precautionary approach, best environmental practices and verified by an internationally recognized environmental consulting firm (selection criteria and mechanism to be defined). ii. Prepared in a language (define) to facilitate review by interested parties plus a non-technical (define) summary. iii. Establish baseline of environmental conditions[13] (a key deliverable under the Exploration Regulations). iv. An assessment of project-related significant effects and impacts, including cumulative impacts. • A draft EIS template can be found in ISA Technical Study No: 10[14] but requires further development and finalisation. • EIA guidelines to establish clear expectations for baseline data. • The EIA / EIS should endorse a~~n~~ ~~inter~~ multi-disciplinary approach. • The Stakeholder Survey highlighted a number of standards and resources for EIA / EIS preparation to be taken account of in developing a model EIS.[15]	• Draft EIS template in Technical Study No.10 to be reviewed and updated. The SPC-EU Deep Sea Minerals Project has offered to share a revised version of the TS No. 10 template. • *Guidelines for the Preparation and Evaluation of an Environmental Impact Statement* to be drafted.[16] Should include simple rating criteria (e.g. US EPA rating criteria). Needs to be resource-category specific. • It is recommended that the above be undertaken by an expert and a draft template and guidelines circulated for comment by interested parties. • Stakeholders observe that no reference has been made to the EIA process itself. Process, principles, consultation processes and definitions of *acceptable impact* to be defined. Acceptable impact? Challenge of

[12] As knowledge is improved, a more structured process of screening and scoping an EIS can evolve.
[13] Broaden baseline definition to "environmental conditions and values" i.e. biodiversity values (EBSAs, important bird areas).
[14] *Environmental Management Needs for Exploration and Exploitation of Deep Sea Minerals*, ISA Technical Study No. 10 (2012) at 17.

		• The concept of an "Environmental Impact Area" may need to be developed to cover areas beyond the exploitation area(s), horizontally and vertically (and cumulative impacts) where significant impacts may occur. Cumulative impacts / effects to be clearly defined. Also identify area associated with each impact type rather than a single area. ~~Boundary points~~ The spatial and temporal extent of Environmental impact areas needs clearly defining and to be informed by best science. Where multiple exploitation areas within a contract area, how will an environmental impact area be defined / enclosed? Strategic environmental assessments should also address and inform cumulative impacts in this regard. • As standards change through knowledge acquisition, what will be the resubmission obligations, if any, placed on contractors?	conservation interests, sustainable development interests and commercial interests; the interaction between the various stakeholders needs to be defined. *Guidelines for Environmental impact assessment process / Best Practice Manual* to be drafted. May require a working group.
Environmental management plan (EMP)	Structure and content of EMP to be drafted / defined.	• An EMP should include inter alia: i. Based on the EIS and on "sound engineering and economic principles" and good mining industry practice (including IFC Performance Standards 1 and 6[17] and other relevant internationally recognized standards[18]) and the precautionary approach, best environmental practices and verified by an internationally recognized environmental consulting firm. ii. Prepared in a language to facilitate review by interested parties.	• EMP template needs to be drafted. • *Guidelines for the Preparation and Evaluation of an Environmental management plan* to be drafted. • Similar to EIS, it is recommended that the above be undertaken by an expert and a draft template and guidelines circulated for comment by interested parties.

[15] For example, Commission for Environmental Assessment *Biodiversity in EIA & SEA Background Document to CBD Decision VIII/28: Voluntary Guidelines on Biodiversity-Inclusive Assessment* April 2006; UNEP *Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach* 2004; EIS Solwara 1 Project Nautilus Minerals Niugini Ltd.
[16] Simple set of criteria for rating EISs could be helpful. See for example, U.S. Environmental Protection Agency, Environmental Impact Assessment Rating System Criteria.
[17] Endorsed in the Stakeholder Survey.
[18] Modified for DSM-specific impacts, as the case may be.

		iii. Methodologies to be employed, sampling and archiving, location of monitoring stations, measurable criteria and threshold indicators. iv. Should reflect parameters for and functionality of Preservation reference zones (PRZs) and Impact reference zones (IRZs). v. Measures / plans for monitoring, management, conservation, remediation, [restoration / rehabilitation][19] and control including those to avoid, minimise, mitigate, rehabilitate and offset, where appropriate, impacts on biological diversity within the impacted area and plans to prevent, minimise, mitigate impacts to water column. • "Offsets" requires detailed consideration. Not to be seen as an alternative to monitoring, mitigation and management. • EMP to be supported by an approved environmental management system (see "Environmental management" below). • Subject to inspection regime and frequent (say, every 2 years?) independent audit. • Preparation (and delivery) to reflect best environmental practice (BEP) and application of the precautionary approach. • Any conditions attaching to EMP approval to be outcomes based, measurable, clear, reasonable and enforceable. Flexibility of EMP to changes and other conditions on an agreed case-by-case basis. • Timing of delivery of EMP: with EIS or conditional and prior to commercial exploitation / post EIS e.g. 3-6months prior to commercial exploitation? • See also Strategic environmental management plan under	• *Guidelines for the design and monitoring of Preservation Reference Zones and Impact Reference Zones* to be developed. This may require an expert working group. • Possible multi-stakeholder workshops post development of EIA process, EIS and EMP templates.

[19] See "Restoration and rehabilitation of the marine environment" below.

		Part IV below: a need for co-operation and harmonisation with contractor EMP process.	
Social impact assessment and action plan (SIA)	Content / action plan to be defined for exploitation activities and socio-economic impacts in the Area.	• Can be integrated with EIS.[20] General consensus SIA can be integrated with EIS. • Given the remoteness of exploitation activities, no immediate communities or individuals potentially significantly affected by operations. Caution to be exercised in assuming there are no immediately affected communities. SIA to reflect cultural considerations. • Other users of the marine environment to be identified (including scientific research potential and other planned uses). To reflect interests of current and future generations? • Considerations for a social action plan could include contributions to marine research (e.g. the funding of research within Areas of Particular Environmental Interest (APEIs)) and incremental training programmes. • See also Seabed Sustainability Fund under Part IV below. • Should SIA extend to an impact on State sponsors? That is, activities in the Area will have an impact further down the value chain.	• Discussion to be advanced on a social action plan for the Area and a call to stakeholders to make contributions to this discussion.
Financing plan	Structure and content of plan to be developed.	• The financing plan will set out the details of how a contractor will finance the capital expenditure, working capital needs of the development and production phases and environmental management obligations. • Regulations and / or contract to provide for a consent mechanism to any charge, mortgage or pledge where such security is required by a financial institution over the mineral resources / interest in a contract for exploitation.	• Template Financing plan (content requirements) to be drafted.

[20] Draft EIS in ISA Technical Study No. 10 reflects "Socio-economic impacts" supra note 8 at page 25.

Closure plan	Structure and content of plan to be developed.	• A closure plan raises many issues. It is seen as a dynamic plan that requires regular review and updating and must anticipate potential closure of an exploitation area prior to the expiration of any plan of work. • At this point it is difficult to assess the exact contents of a Closure plan for the Area, but *may* include:- o "basic" decommissioning (removal of installations, plant and machinery); o Restorative obligations at the time of closure? (fuller discussion is needed here. See Restoration and rehabilitation of the marine environment below); o Ecological assessment (determine what is necessary to allow nature to recover); o Need for a guarantee or bond? (See Environmental bonds and guarantees). o Post closure environmental management and monitoring obligations to be defined. Also to determine the period / duration of post closure monitoring – appropriate benchmark (years)?	• Template Closure plan and *Guidelines for the Preparation and Implementation of a Closure plan* to be drafted. • It may, however be too early to define the operational parameters of the closure plan.
Size and location of exploitation area(s) covered by the plan of work	Guidance criteria for determining the size (and location) of exploitation area(s).	• The Convention requires that RRPs be established in accordance with objective criteria for the size of areas being: stated production requirements, the state of the art of technology and relevant physical characteristics of the areas…which "shall be neither smaller nor larger than are necessary to satisfy this objective".[21] • Some stakeholders noted that such RRPs should not simply be a determinant of size but also of location and	• There are matters of policy to be addressed by the Council and relevant stakeholders. Specific guidelines then need to be drawn up to identify the criteria to be applied in assessing the size and location of exploitation area(s). It is likely that additional expert input is required here and / or

[21] Annex III, Article 17(2)(a) of the Convention.

		that the Authority reserve the right to determine mining block order[22] (adaptive management?[23]). • Albeit, stakeholder comments regarding block order were directed at environmental considerations, the point is equally valid from the viewpoint of practices such as "high-grading". What will the Authority's policy, if any, be here? An average balanced grade? How will / should this be defined?[24] High grading may reduce environmental footprint? • The US Deep Seabed Hard Minerals Resources Act makes reference to both size and location and to a "logical mining unit" which includes economic and environmental considerations as criteria.[25] • Principles ("criteria") for determining the size and location of the exploitation area suggested in the framework *could* include (and reflecting stakeholder responses): - o The production requirements of the applicant (Convention) / the commercial viability of the exploitation area; o The state of the art technology to be employed (Convention); o The relevant physical characteristics of the area (Convention); o The environmental considerations including the location of the exploitation area(s) and the intensity of the exploitation operations; o The proximity of the exploitation area(s) to	initial thoughts of contractors as to their proposed exploitation areas and production requirements.

[22] This may necessitate the sub-division of exploitation areas into blocks. To be balanced with applicant's desire for commercial flexibility to manage exploitation operations.

[23] Initial duration of exploitation operations, review periods and the intensity of exploitation operations are also relevant considerations under an adaptive management approach.

[24] See also Section 4 to this Report: Summary of high level issues.

[25] 30 U.S. Code § 1413, License and permit applications, review, and certification.

		adjacent exploration and / or exploitation areas covered under other third party plans of work / reserved areas;[26] ○ The proximity of exploitation area(s) to marine protected areas (including APEIs) and vulnerable marine ecosystems; ○ The size and location of PRZs and IRZs (depending on design criteria – see "Environmental management plan" above); ○ The proximity of exploitation area(s) to coastal States; ○ The impact on other users of the proposed exploitation area(s); ○ The proximity to submarine pipelines and cables. • It should be noted that there is neither consensus nor agreement on the above principles and criteria beyond those stated in the Convention. Further consideration of this issue is required.	
Fee for applications	Wording can be adapted from the exploration regulations.	• The actual costs of processing exploitation applications will be considerably higher than that under exploration applications given the more stringent documentation reviews and inspections. Equally, decisions will need to be made concerning the costs for independent evaluation processes (e.g. the EA / EMP) and who these are to be incurred by. • Additional administration, revision, renewal and consent-type fees will likely arise under a contract for exploitation. • Note: the 1994 Agreement requires the payment of an annual fee from the date of commercial production.[27] This	• It will not be possible to set an application fee at this stage until the review, assessment and administration processes are fully defined.

[26] There is a real possibility that exploitation operations in one area may impact adjacent exploration or exploitation areas through smothering by operational and discharge plumes. This needs to be addressed and buffer zones considered.

		will be reflected in the "Financial terms" Part of the regulations, when drafted.	
Receipt, acknowledgement and safe custody of applications	Wording can be adapted from the exploration regulations.	• No comment.	• Not applicable.
Public review of the Environmental impact statement and Environmental management plan [and Social impact assessment and Closure plan]	An open, inclusive and cost-effective decision-making process needs to be developed for the review of specific documents by interested parties.	• Under the principle of transparency in decision-making on matters likely to have a significant impact on the environment (including socio-economic impacts), an-inclusive, open review process needs to be developed, particularly for the EIS / EMP, SIA and Closure plans. • Public concerned / potentially impacted are not immediately identifiable but mankind as a whole has, arguably, a vested interest. • While a public review and engagement process is common practice in many national jurisdictions, this requires much thought for activities in the Area, including the practicalities of any procedure, timings and costs. • A number of alternatives have been put forward by stakeholders, including review mechanisms by independent experts and panels and the public availability of relevant documents and information for review. • All stakeholders endorse an inclusive and transparent review process. However, clear process and procedures need to be adopted for this. As noted in one stakeholder submission "it is important that the degree of influence public engagement can have on impact assessments and	• A working paper needs to be drafted setting out the public participation options and procedures available, including independent expert review(s), based on stakeholder submissions and best practice regimes. The paper must then be circulated to stakeholders for comment. • General consensus but further work needed to inter alia identify key stakeholders, review processes and the management of stakeholder expectations and be supported by an open access data system.

[27] Annex, Section 8(1)(d). The point of commencement of commercial production is broadly defined in Annex III, Article 17(2)(g) of the Convention. There will be a number of factors that point toward commercial production having been reached. In land-based mining this can be a blurred area and the extent to which it is possible to define an operating capacity threshold may be preferable.

		management plans required by the RRPs is made very clear, so that the expectation of those who choose to engage are appropriate". A paper concerning this incorporating other views expressed by stakeholders must be drafted. From an operator perspective, timelines will also be key.	
Consideration by the Legal and Technical Commission	The content of this regulation (which can be adapted from the Exploration Regulations) together with evaluation guidelines is key for contractors – element of certainty as to process, timings and evaluation criteria.	• A re-write of this regulation is likely required to provide for all the necessary eventualities for the Commission's consideration of a plan of work and its subsequent recommendation(s) to Council for approval or rejection of an applicant's plan of work for exploitation. • Time limits and milestones in the process will also be critical to contractors as well as the evaluation criteria on which the Commission will ultimately base their recommendations to Council. This could include any reasonable conditions[28] proposed by the Commission (or negotiated with a contractor) to the Council as part of that recommendation procedure. • An application for the approval of a plan of work for exploitation will require approval of all "documents"[29] submitted and must ensure that the necessary review and public participation procedures have been followed and account taken of submissions received by the Commission	• Detailed guidelines will be needed in respect of evaluation criteria to be used by the Commission. • A technical working paper needs to be drafted to elaborate on the concept of *sound commercial principles* (see 1994 Agreement, Annex, Section 6(1)(a)).[30] • A technical working paper is required to elaborate on *substantial evidence* of risk of serious harm to the marine environment in the case of area(s) disapproved for exploitation.[31] This is considered critical together with a wider discussion of thresholds to take

[28] An indication of "reasonable conditions" and how this will be interpreted must be considered and expanded upon. Plans of work will not be identical. Conditions could include: the provision of a bond or guarantee; the purchase and maintaining of a specified category of insurance; any specific monitoring and reporting obligations (over and above those under the regulations); the appointment of observers; the duration of consent for an environmental management plan and any conditions relating in whole or part to an adaptive management approach. Conditions will be recorded in a relevant schedule to a contract for exploitation.

[29] Based on the documents (and other information requested) the Commission will need to be satisfied that an applicant has the capability and systems to deliver health and safety and environmental requirements; that the applicant has adequate technical and financial capability to deliver the plan of work and that project economics are sound etc.

[30] This provision stipulates that as part of the production policy of the Authority, the "development of the resources of the Area shall take place in accordance with sound commercial principles". A marine minerals policy and programme document will need drafting as data and information on Area resources is more comprehensive.

[31] See Regulation 21(6)(c) PN Exploration Regulations. The working paper should address the application of the precautionary approach.

		from interested parties.	account of the precautionary approach. ~~/ principle~~. Burden of proof to be reflected.
Consideration and approval of plans of work for exploitation by the Council	Wording can be adapted from the Exploration Regulations.	• To consider whether Council should take an additional governance step of satisfying itself, particularly where a public review process is required, that submissions from any review mechanism have been duly taken account of in the decision-making process and that the application conforms, to best of knowledge and belief at the time, that say Annex, Section 6 of the Agreement has been complied with.	• Should any specific Council procedures and criteria be developed here? • Stakeholders generally endorse the need for additional governance steps by the Council.
Independent technical expert working group / sub-committees	Consider setting up expert working groups or sub-committees to support the work of the Commission.	• Given the pressures that applications for plans of work for exploitation will place on the existing assessment and decision-making structure, particularly in the LTC, additional expert working groups or sub-committees may be required. Specific expert needs will need to be identified. Clearly defined terms of reference / mandates / rules of procedure for any expert working groups or sub-committees will need to be examined and other international models considered. Such working groups or sub-committee should be set-up in accordance with the Convention and / or Agreement.	• Should this be formalised under the regulatory framework? Yes, generally endorsed by stakeholders.

Part III Contracts for exploitation

The Contract	Wording can be adapted from the Exploration Regulations.	• In addition to the standard clauses, specific conditions may be approved by the Council based on recommendations by the Commission and reflected in the relevant Schedule to the Contract.	• Not applicable. However, the Authority must provide an indication of "likely" specific conditions which may be imposed or agreed.
Rights of the	Wording can be adapted from	• It would seem appropriate to identify, as exhaustively as possible, what rights, including exclusive rights, are being	• Priority consideration to be given to this by the Secretariat,

contractor	the Exploration Regulations.	granted here, unless it is felt clear that the definition of "exploitation" covers this? For example, the definition of "exploitation" does not include "exploration" but should be a right to explore in the exploitation area(s). • This must be prioritized and the nature of exploitation rights made clear and unambiguous. See also "Previous contracts with the Authority" and the issue of "preference and priority". • It is anticipated that the Standard clauses for an exploitation contract (to be drafted) will provide a clearer understanding of rights (and obligations) of a contractor.	proposed language drafted and circulated to stakeholders and / or included in zero draft regulations and standard terms of contract.
Obligations of the Authority	To provide clarity on any obligations of the Authority.	• To the extent that any duties of or obligations on the Authority are unclear or not dealt with elsewhere, a provision should be drafted to provide clarity, and reflected in the standard contract as appropriate.	• Consideration to be given to this by the Secretariat. ISA to provide examples of specific gaps / areas needing clarity; not to exceed / go beyond Convention / Agreement.
Legal title to minerals	To provide that legal title passes on "recovery" but with any restrictions?	• Are there any restrictions that can / should be placed on the transfer of title where the contractor is say in breach? For example, a prohibition on sale / disposal until all fees, royalties, profit-share etc. have been paid – or suitable arrangements made. Any restrictions to title may impact funding terms for commercial operators. • Clarity on the point at which the legal title transfers is needed. Diverging points of view.	• Consideration of the phrase "recovery in *accordance* with the Convention"[32] requires a technical working paper to be drafted. • General agreement working paper needed.
Duration of contracts / renewal	This draft regulation relates to security of	• The Convention prescribes limited objective criteria:[33] o The economic life of the mining project – depletion of ore, the useful life of mining equipment and processing facilities and commercial viability;	• Further understanding of contractor development, production and economic models and plans is required here. To be

[32] Annex III, Article 1 of the Convention.
[33] Annex III Article 17(b)(iii) of the Convention.

	tenure and a key contractual term for contractors.	○ To permit commercial extraction; and ○ Reasonable time for construction of commercial-scale mining and processing systems. ○ But (important wording): "the total duration of exploitation, however, should also be short enough to give the Authority an opportunity to amend the terms and conditions of the plan of work at the time it considers renewal in accordance with [RRPs] which it has adopted subsequent to approving the plan of work". • Duration will likely be resource category specific. • The Stakeholder Survey identified periods of tenure ranging from an initial 10-year period to a general consensus range of 15-25 years and renewal (extension) periods of 5-10 years (at least in the case of polymetallic nodules). • Duration is also relevant to the development and revision of a financial payment mechanism. • Precise point at which a contract for exploitation commences needs to be specified. • It is suggested (from the Stakeholder Survey) that a substantive review period occur at approximately 5 years into the contract term. The specific conditions attached to that review should be established at the time of the initial application for a plan of work for exploitation. • It may be possible to approve stages of exploitation operations. In the early phases of this industry, the nature of the deposit may require a gradual procession to commercial production. If it subsequently comes to light that the deposit extent is less than originally forecast, the duration (or size of area) needs to be adjusted. Uneconomic production and recovery is to be avoided: this may be difficult to prove e.g. where recovery is strategic	formulated as a matter of priority in conjunction with contractors. • A balance needs to be established between the commercial requirements of contractors and the ability of the Authority to amend terms and conditions in accordance with revised RRPs. • A working paper needs to be developed for circulation to stakeholders. • Guidelines need to be developed for the following: ○ Criteria for contract duration – resource specific. ○ Application and evaluation criteria for a substantive review. ○ Application and evaluation criteria for renewal of an exploitation contract.

		and not economic? Perhaps better wording to avoid "inefficient and harmful production"? • Commencement of mining: as soon as possible but a logical development of production areas within the exploitation area leading to maximum economic recovery plus development of infrastructure and transporting and processing construction. • As to periods of renewal / extension, thought will need to be given as to whether this should be treated as a "fresh" application and subject to identical rules of process and procedure as the original application? Bearing in mind the inclusive and participative approach being taken. • A starting point for the regulations could be: o Specify a maximum initial period; o Define the parameters of any renewal against specified criteria (depletion of ore, commercial viability, contractor not in material default) and documentation needs; o Provide for a substantive review period at the end of first 5 years based on pre-determined performance and other criteria and included in the contract – with the ability of the Authority to adjust terms etc. o And other review periods at pre-defined timeframes or triggered on the happening of specific events. • Security of tenure[34], stability and certainty within the legal framework is a key investor requirement. This also extends to a full understanding as to what circumstances exploitation contracts may be terminated, potential conditions applied at periodic reviews, transferability of a	

[34] Article 153(6) of the Convention specifically recognizes security of tenure and that no contract is to be revised, suspended or terminated except in accordance with Annex III, Penalties (article 18) and Revision of Contract (article 19).

		contract for exploitation etc.	
Performance requirements	This draft regulation should specify the production obligations under a plan of work.	• Under the Convention[35], the Authority is obliged to "establish a maximum time interval, after the exploration stage is completed and the exploitation stage begins, to achieve commercial production". Allowance here is to be given for construction time and unavoidable delays. This may also need to factor in environmental approvals. • Then following commercial production, "the Authority shall within reasonable limits and *taking into consideration all relevant factors* require the operator to maintain commercial production throughout the period of the plan of work". Need to elaborate on *taking into consideration all relevant factors*. That is, in practice, what factors will potentially delay, halt or suspend commercial production? Technical and economic conditions will be one factor. Equally, no "right" of the Authority to force uncommercial activity. • The mining plan and estimated date of commercial production will be assessed during the evaluation phase (Feasibility study). The approved Feasibility study locks the contractor in to the production undertakings in that study. • A cut-off point needs to be adopted where no commercial activity has taken place and to afford other operators the opportunity of developing the resources in that area. The US Deep Seabed Hard Minerals Act provides a cut-off point of 10 years, unless a contractor can show just cause (define criteria).[36] Equally, for any periods of inactivity, should the contractor be required to pay a surface rent? Arguably, yes but at what rate / level? For further	• *Guidelines for the evaluation of Production performance requirements under a contract for exploitation* to be drafted. To include key performance criteria and indicators. • Council to consider as a matter of policy, in discussion with relevant stakeholders, whether a cut-off point for commercial inactivity should be established, taking account of the nature of any inactivity. • No subsidization: how will this be defined, identified and eliminated in practice? More likely to occur during "strategic" rather than commercial mining? • Commercial inactivity: flexibility to respond to changes in market conditions.

[35] Annex III Article 17(2)(c) of the Convention.
[36] See 30 U.S. Code § 1417, Duration of licenses and permits. The use of this reference to the US Deep Seabed Hard Minerals Act has been criticized, as the Act is not "operational". However, it is merely to serve as a reference rather than absolute until detailed discussion is concluded.

		discussion but account to be taken of nature of inactivity e.g. economic downturn and where operation is put on "care and maintenance". • Also provision should be made for a contractor to apply for a suspension in commercial production due to say economic conditions (see also Revision clause in the contract). • Performance requirements expected of the contractor are key and arguably form fundamental terms of the contract. Flowing from the Feasibility study, key performance criteria and indicators should be established. Guidelines will be needed. For example, the Feasibility study should provide production estimates for the mining operation; where recovery falls below such agreed estimates by a pre-determined percentage, the Authority should be in a position to require the contractor to improve the efficiency etc. of the mining operation. • From a commercial perspective, a contractor should be permitted to make *minor* changes to an approved programme of activities without recourse to the Authority. However, any *material* changes should require the Authority's prior approval. The distinction between *minor* and *material* should be discussed and agreed during the application and approval process and also reflected in any guidelines (definition / criteria for *material* and *minor*). • It is usual in a land-based mining context that an operator is required to undertake capacity tests of the mining equipment. Again, this needs to be considered. • The following could also be included in this section: o Production takes place in accordance with sound commercial principles (see "Consideration by the Legal and Technical Commission" above); o No subsidization of activities;	

		○ No discrimination; ○ Stipulate Council's powers to investigate and take measures.	
Avoidance of unnecessary waste in respect of the resources of the Area	General obligation to avoid unnecessary waste.	• To permit the Authority to impose reasonable conditions and / or issue guidelines to achieve "in accordance with sound principles of conservation, the avoidance of unnecessary waste'.[37] • Visibility of processing and treatment of the ore should be stipulated.	• A policy in respect of resource waste management needs to be developed.
Use of sub-contractors	To specify the obligations on a contractor where sub-contractors are engaged.	• Contractor's right to sub-contract but also contractors to extract the necessary guarantees for sub-contractor performance. • The use of sub-contractors should be addressed in the Feasibility study – full disclosure.	• ISA to elaborate intentions / operationalization of this element. Parallels with land-based regimes to be considered.
Vessels operating in the Area	To specify the obligations on a contractor in relation to vessels undertaking activities in the Area.	• Requirement for vessels engaged in exploitation activities to remain in Class and be subject to general international legal obligations and appropriate conventions. • Need to establish clear line of duties and responsibilities and co-operation between the Authority and the International Maritime Organization (IMO).	• Discussions between the Authority and the International Maritime Organization to be formalised.
Protection of submarine cables and pipelines	To specify the obligations on all parties including	• Procedures to be established to notify submarine cable operator organizations of a plan of work application showing co-ordinates of proposed exploitation area(s). • Reporting / notification protocols to be established.	• Discussions between the Authority and relevant representative organizations formalised. • Joint report / technical study (ISA

[37] Article 150(b) Convention. The Exploitation RRPs will also need to address other "waste" streams. Waste stream categories must be defined and addressed accordingly.

	notification procedures.[38]		Technical Study No 14) prepared by the ICPC / ISA following a joint workshop held in NYC on 10-11 March 2015. Available at https://www.isa.org.jm/document/submarine-cables-and-deep-seabed-mining
Health and safety	To specify the additional measures that supplement existing international agreements.[39]	• To establish what supplementary duties and obligations the Authority has as a regulator in connection with health and safety together with applicable standards. • Training of employees in health and safety procedures. • Labour standards also require consideration (International Labour Organization). • Implementation of safety zones and other obligations under Article 147 Convention (IMO / ISA roles). • Regulator to promote occupational health and safety.	• To determine additional international / DSM-specific standards and the extent of the Authority's remit / duties and responsibilities.
Training	Training obligations on a contractor.	• To be submitted as part of the documentation requirements on application for a plan of work. • Thought to be given to the needs of the future industry and training programmes targeted accordingly. Training obligations could also be facilitated under the requirements of a Social impact assessment and contribution, that is, incremental training programmes including tertiary scholarships etc. • Note: training obligations of contractor personnel too in matters of occupational health and safety etc.	• To establish areas of skills and talent shortages key to the development of the DSM industry.
Periodic	As per content	• Periodic review at 5-year intervals. Contractor is / may be	• *Guidelines on Procedures and Information Requirements for*

[38] Arguably an obligation for sponsoring States to have RRPs in place as well. See Article 113 of the Convention.

[39] See Article 146 of the Convention. Relevant international agreements / practices include: International Convention for the Safety of Life at Sea and International Management Code for the Safe Operation of Ships and for Pollution Prevention (IMO).

review of the implementation of the plan of work for exploitation	of Exploration Regulations.	obliged to implement / adjust its programme of activities for the next five year period (adaptive management approach). • Greater clarity and guidance will be needed over the substance and content of these reviews for exploitation programmes. Conditions and criteria of any review should be clearly stipulated in any guidelines. Clearer indication / picture of ISA's regulatory role required here. • Additionally certain events will require notification and perhaps the production of incident or exception reports. For example, if commercial production falls below average targets, casualties or the achievement of milestones. Must define events subject to notification and determine the exact nature of the regulatory role in this context. Specific conditions may be imposed which require more regular reporting. Reporting is obviously a key area of governance under the regime but it needs to be targeted and relevant to the Authority's role as regulator.	*Review* to be drafted.
Termination of sponsorship	As per Exploration Regulations.	• What obligations remain with the contractor post termination? Does a contractor remain liable for say EMP monitoring obligations? • Monitoring of EMP, mitigation until such time pre-agreed standards or criteria are met? Who will carry out monitoring?	• To establish clarity on post termination obligations for a contractor. ISA to prepare / commission a study of options available.
Responsibility and liability	As per Exploration Regulations.	• Wording of the Exploration Regulations principally reflects the Convention.[40] The liability of the contractor is for wrongful acts. There is also an overlap in responsibility and liability under the laws of a sponsoring State. Strict liability may be imposed under national law. • The area of liability and redress in the Area particularly as	• Legal workshop required to explore and develop further principles of responsibility and liability in the Area. Stakeholders wish to see this prioritized.

[40] Annex III, Article 22.

		regards environmental damage remains at an embryonic stage of development.[41] Calls for a separate working group to look at this issue were made in the Stakeholder Survey. • Questions to be addressed could include: o When there should be liability; o What the basis is for liability; o The appropriate attribution of fault e.g. strict liability or otherwise; o The availability of damages and the limitation of liability; o Financial security; and o Compensation mechanism.	

Part IV Protection and preservation of the marine environment

Protection and preservation of the marine environment	General wording in Exploration Regulations to be adapted.	• Acknowledgement of the general principles and obligations within the exploration regulations should remain. That is, application of the precautionary approach, BEP, measures to control pollution. Should also specify an adaptive management approach as part of BEP. • A vast amount of work needs to be performed in this area from agreeing the thresholds of serious harm to the efficacy of PRZs and IRZs, developing workable environmental targets and indicators and the application of a precautionary-risk management framework. Prescriptive regulations and detailed guidelines will be the ultimate output here; however, it is too early to draft the same without input from experts, interested stakeholders, relevant international organizations (e.g. IMO in respect of marine pollution) and knowledge advancement. • Dumping: the 1972 London Convention[42] and the 1996	• This area requires the formation of targeted expert workgroups consisting of a broad range of stakeholders, including relevant international organizations. • Specific consideration of "dumping" RRPs. • Waste Assessment Guidance developed under Annex 2 of the Protocol of potential relevance. To include requirements for a waste assessment and waste assessment prevention audit. IMO / ISA co-operation. New Zealand government have also expressed an interest in

[41] The Seabed Disputes Chamber of the ITLOS noted "[a]rticle 304…opens the liability regime for deep seabed mining to new developments in international law", either under the existing regime or under customary international law. This is further endorsed by the Convention which obliges the ISA Assembly to promote "international co-operation concerning activities in the Area" and to encourage "the progressive development of international law relating thereto".

		Protocol to the London Convention currently exclude the dumping of wastes or other matter connected with seabed mining activities from its scope. More specifically Article 1(4)(3) of the 1996 Protocol states "[t]he disposal or storage of wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of seabed mineral resources is not covered by the provisions of this Protocol". • It would thus seem that the disposal or storage of waste or other matter directly arising from "activities in the Area" will need to be regulated by the Authority as the competent agency / international body. What will constitute "dumping" in the Area? E.g. the deliberate disposal of sediment from on-board processing and vessels and mining collector in emergency situations? What protection measures will be needed (possible co-operation between the Authority and the IMO)? Regulations should be drafted and the terms for say an EMP should / could reflect specific waste assessment framework(s), monitoring and reporting obligations connected with the dumping of waste (as defined). • Objectives-based regulations rather than prescriptive measures?	contributing to the development of specific RRPs for waste management.
Environmental management	To operationalize the EMP.	• The OSPAR *Guidelines for Monitoring the Environmental Impact of Offshore Oil and Gas Activities* (2004-11) provide a sound basis and guide aimed at environmental monitoring (the design and conduct of monitoring programmes) of discharges from oil and gas activities. This can be adapted for the specific requirements of exploitation activities together with other relevant best practice identified in the Stakeholder Survey and through	• Specific guidelines on environmental management systems to be developed. • Flexible approach to auditing depending on performance • Objectives-based environmental management endorsed: control measures and associated

[42] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

		future expert / workshop engagement. OSPAR Guidelines could be a good starting point but caution that they are formulated for shallower waters and better understood environments than the broad scale environmental impacts of DSM. Other guideline e.g ICES guidelines for marine aggregate extraction could be relevant. • This regulation should oblige the contractor to have an internationally recognized environmental management system (EMS) in place e.g. ISO 14001: 2004. • Specialists should conduct independent audits say every 2 years for the EMP and EMS. • Any *material* revisions to an EMP to require the prior approval of the Authority. Criteria / definition for *material* required. • Contractors should, in addition to their reporting obligations to the Authority, make available a public annual statement of its environmental targets and its performance delivery against environmental indicators.	performance standards and measurement criteria to be developed / defined.
Emergency orders	As per Exploration Regulations.	• This is an area that requires further detailed input as to its practical operation. While the rationale behind emergency measures is sound, its practical application may be limited. Consequently, a focus on and during the application, reporting, inspection and review processes of contractor risk management systems and processes will be of greater significance, including a contractor's Emergency response and procedures plan. While this regulation is targeted at the protection of the marine environment, human health	• Secretariat to review contemporary best practice in the field of marine disaster management and responding to emergency situations including the lessons learned. • Consider working group with IMO and relevant regional organizations.

		and safety is of fundamental importance. • Can draw on much existing best practice where relevant,[43] including reporting protocols. • Set up specialized technical committee? Also consider power to hold commission of inquiry into incidents in co-operation with IMO etc.	
Strategic environmental management plan (SEMP)	The requirement to conduct regional SEIAs and deliver regional SEMPs.	• This regulation would place an obligation on the Authority to conduct a Strategic environmental impact assessment(s) of the Area and to develop Strategic environmental management plan(s) (SEMPs) including the development of APEI's. Importance of SEA to identify cumulative impacts. • The issue of regional SEMPs for the Area drew much discussion from stakeholders and the need to have SEMPs in place prior to commercial exploitation. • The regulation should specify the objectives of the SEMPs. • Regional SEMPs to include social impact assessment. • See also contractor EMP obligations under Part II above: a need for co-operation and harmonization of SEMP and contractor EMP deliverables.	• Work plan / terms of reference to be scoped for developing SEMPs. • Regional workshops and co-operation to be developed to formulate regional SEMPs. • This is seen as a priority area by many stakeholders. • Note: care and consistency in use of terms e.g. strategic environmental assessment versus strategic environmental impact assessment. Terminology needs to be clearly defined / internationally accepted terminology to be used.
Rights of coastal States	The wording from the Exploration Regulations remains relevant.	• Reference to any likely impacts on coastal states should be addressed in the EIS, where considered significant. See also "Size and location of exploitation area(s) covered by the plan of work" above.	• None at this stage.

[43] For example, stakeholders suggested: International Convention on oil pollution preparedness, response and cooperation, 1990; IMO Pollution Incident Response Planning Resolutions MEPC.54(32) & MEPC.85(44); EPA (US) Area Contingency Planning Handbook and EU Directive 2012/18/EU on control of major-accident hazards involving dangerous substances.

Environmental bonds and performance guarantees	To provide for a bond or financial guarantee where requested by the Authority.	• The necessity for a bond or related performance guarantee requires detailed consideration together with the form that any bond / guarantee should take: cash deposit, parent company guarantee, State guarantee, financial institution letter of credit – and associated investment grade of any issuer. Cash bonds are preferable. The terms of its release and what can be deducted against the deposit must be established. • For commercial operators there is generally a preference for commercial insurance rather than bonds. • Importance of equality of financial treatment and comparable financial obligations across the contractor base. • Not all jurisdictions request a bond in practice under mining regimes but may make provision in their regulations for a bond, particularly to secure any closure obligations (restoration / rehabilitation). In the case of activities in the Area these obligations may be minimal (save for any post closure monitoring) and a cash bond or guarantee connected with the performance of the EMP may be more preferable. The rationale and purpose(s) of any proposed bond mechanism requires discussion and should not cover obligations regulated under other regimes. There may be need to consider bond levels on a case-by-case basis depending on the activities being undertaken in the Area e.g. additional processing, higher bond?	• The interaction between commercial insurance and bond mechanisms needs to be investigated together with the terms and conditions, including appropriate quantum of any bond. • Mixed endorsement: ~~if~~ where proposed, needs~~-~~ clear parameters to establish a viable model.

Restoration and rehabilitation of the marine environment	A general restoration obligation where restoration is feasible seems appropriate.	• To include a general restoration obligation.[44] Restoration to occur where directed to do so by the Council. This would be based on the Commissions' recommendations that would take account of the likely effectiveness of techniques based on necessity; technical feasibility; and cost-efficiency on the basis of a cost benefit analysis, where such quantification can be reasonably assessed. • Restoration will also be impacted by "passive rehabilitation", that is, the ability for natural recovery to occur. • "Restoration" & "rehabilitation" will require appropriate legal / scientific definition in a marine environment context.	• None at this stage. • General disagreement / disfavor to a general restoration obligation. But, a suggestion to include / consider in an EMP and / or closure plan but not a legal obligation at this stage of development? General consensus by stakeholders for focus to be on impact minimisation and mitigation measures rather than restoration at this time.

Adaptive management approach	A regulation that better defines adaptive management.	• All actors to adopt an adaptive management approach to exploitation activities. Adaptive management may include:-
		  • The permitting of exploitation operations to proceed on a smaller scale or for shorter defined periods of time in order to assess impacts on the environment and on human health and safety;
		  • The duration of any approval of an EMP;
		  • The frequency of review periods to be imposed by the Authority; and
		  • Additional reporting obligations under an EMP.
		  • Note: this approach should be balanced with the commercial (economic) viability of operations (principles of sustainable development). Development of cost-benefit analysis models needed.
		  • Consider Canadian Environmental Assessment Agency adaptive management model?
			• Adaptive management in connection with exploitation activities in the Area requires further elaboration with interested parties through a working group and incorporating discussion of a precautionary risk management framework.
			• The New Zealand Government has offered to work with the ISA given its recent regulatory development and marine consent experience.
			• Adaptive management has now been reflected as a High-level issue.

Seabed	To establish a	• The idea and rationale of a fund is for the Authority to be in	• A working paper / terms of

sustainability fund	seabed sustainability fund with targeted objectives.	a position, based on expert recommendations, to direct further research e.g. in relation to marine ecosystems in the Area and to develop institutional capacities.[45] At the moment the Authority / Common heritage of mankind are in a "Catch 22" with no budget for large-scale research activities. • The fund could be financed by way of a levy e.g. USD x per wet / dry ton of ore recovered on board the mining vessel. • Contributions to the fund could also be considered an element of social contribution. • The fund could target the development of technology, which also presents a revenue stream opportunity for the fund (e.g. patent royalties). • Such a funds merit and appeal has yet to be tested but there is a strong rationale for such a fund.	reference to be drafted articulating the concept and objectives of such a fund for circulation to interested parties. • Widespread appeal but: how / who will fund this? Is an ore levy equitable? Contributions as a % of investment? Funding alternatives must be considered.
Environmental liability trust fund	As recommended by the Seabed Disputes Chamber of the ITLOS.[46]	• The rationale for such a fund stems from a potential environmental liability gap. The merit of such a fund was presented in the Stakeholder Survey. • Given the suggested Seabed sustainability fund above, the need for an additional fund requires consideration. However, the rationale for this fund is different and could be funded by allocating a portion of production royalties received by the Authority.	• None at this stage. • To consider as part of "responsibility and liability" action? • IOPC Fund a potential benchmark? • General endorsement but further discussion required, particularly timing of set-up and funding options.

[45] The concept of such a fund originated from the Stakeholder Survey and is based on the Aggregates Levy Sustainability Fund in the United Kingdom. The rationale for such a fund is also supported by other stakeholder comments including the development of a non-fault based mechanism for research in the deep sea environment.

[46] International Tribunal for the Law of the Sea: Case No. 17: *Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area* (Request for Advisory Opinion submitted to the Seabed Disputes Chamber).

Human remains and objects and sites of an archaeological or historical nature	The wording of the Exploration Regulations remains relevant.	• The SIA and action plan should address any specific matters relating to the cultural heritage in the exploitation area(s).	• None at this stage but to be considered as part of SIA process.

Part V Confidentiality

Confidentiality of data and information & Procedures to ensure confidentiality	The wording of the Exploration Regulations *may* be relevant.	• Amendment of the Exploration Regulation's wording may be required in the light of any agreed public participation and review processes. The principles of the EITI are also relevant here. • There is a call, within the Stakeholder Survey for a presumption that all data is public (including contracts for exploitation etc.) unless demonstrated otherwise. This would not extend, however, to confidential information and data. • Data flow and participation / review processes will drive any amendment of the confidentiality provisions here. Best practice is to be sought.	• Confidentiality is raised as a High-level issue.

Part VI General procedures

Notice and general procedures	The wording of the Exploration Regulations remains relevant.	• None.	• None.

Recommendations for the guidance of contractors	The wording of the Exploration Regulations remains relevant.	• This provision may need to be "updated" as to the processes necessary to draft and adopt such recommendations, including the necessity for expert input and review by interested parties where applicable.	• The process of issuing recommendations by the Commission needs review.
Duty to cooperate	A general duty on all parties to co-operate and exchange information is necessary.	• A general regulation to stipulate the Authority's obligation to co-operate with a sponsoring State (and vice-versa) where required. Member States should equally be under a duty to co-operate and assist the Authority (and vice-versa). • A duty to co-operate with the Authority is not only essential for "joint" investigation and enforcement of operational obligations, but also of sharing information for financial auditing purposes. In practical terms once an ore vessel has left the Area, what "control" will the Authority have over auditing for say royalty payments? Access by a Member State to customs and related documentation when the vessel arrives in a Member State port or shipments to the treatment and processing plants will be crucial. • Aside from "co-operation", perhaps an *exchange of information* provision is applicable here as well defining the types of information that needs to be shared to allow the Authority and Member States (and sponsoring States) to discharge their duties to the common heritage of mankind. • Strengthening co-operation with relevant organizations.	• None but see Summary of high level issues. • Needs operationalizing: specific expectations / obligations?

Part VII Enforcement, offences & penalties

Inspection	To include inspection regime in headline	• The general wording of the Exploration Regulations (contract) should be retained. However, the inspection regime requires detailed input, an understanding of any potential overlaps with sponsoring State regimes and its	• Develop a working paper setting out a suggested structure and options, including funding, for the operation of an inspection regime, taking account of

	regulations rather than standard terms of contract.	funding and independence.
		• Use of best technology for remote supervision / "inspection".
		• Need parameters for:
		  ○ What will be inspected?
		  ○ The qualifications of inspectors? Multi-disciplined or specific focus?
		  ○ The training of inspectors?
		  ○ Production of an inspector's manual.
		  ○ Code of Good Practice on integrity, professionalism and transparency (see Paris MOU / Regional Port State Control).
		• Option here for Member States to nominate their nationals as inspectors. But for such nationals not to be permitted to inspect operations involving their nationals or persons under their control where a Member State is say a sponsoring State.
		• In a DSM context, could explore possibilities of cooperation between the Authority's Mining Inspectorate and Regional PSC MOUs to collaborate on gathering and sharing data on contractors' compliance with their obligations, including mining equipment certification and standards (apparently being developed by classification society ABS and maybe others), contingency, safety plans and other plans relevant to the Mining Inspectorate.
		• (See also "Duty to co-operate" above, which will also be of relevance here).
			comments made in the Stakeholder Survey.

Offences & penalties	Specific, measurable offences to be defined together with associated	• A specific list of offences to be included in the regulations, as amended by the Council as appropriate. Parallels can be drawn from existing regimes. • Penalties can either be included in an annex to the regulations, as amendable by the Council. • General characteristics: proportionality; escalation process	• Desktop review to be undertaken on existing / comparable regimes. • Interaction with sponsoring State offence and penalty regime to be understood.

	penalties.	(i.e. warning process, agreement for remedial action; enforcement notice; administrative penalty etc.). Penalties ideally against measurable parameters (targets, thresholds) rather than breaches of procedural obligations?	

Part VIII Disputes

Settlement of disputes	As per Exploration Regulations.	• Opportunity to consider "lower level" administrative appeals for the plan of work application process? That is, a simpler appeal mechanism for the Commissions' recommendations on the outcome of a plan of work or its constituent elements.	• A technical working paper needs to be prepared to set out dispute resolution options under the Convention.

Part IX Resources other than [mineral category]

Resources other than [mineral category]	As per Exploration Regulations.	• None.	• None.

Part X Review

Review	As per Exploration Regulations.	• Given the adaptive management approach, in the early stages of development, the exploitation regulations will benefit from an annual evaluation.	• None.

Annex II Contract for exploitation

A full analysis of the proposed standard clauses for a contract for exploitation is not given below. Many of the standard clauses including development, production and performance obligations will flow from the headline regulations. However, there are 5 suggested provisions below that require action and / or consideration.

Clause relating to:-	Commentary	Action
"Dealings" or arrangements	• A contractual clause (or regulation) may be needed to deal with any unfair or uneconomic practices (Annex, Section 6 of the Agreement) that occur throughout the value chain. This needs expert consideration but there could be agreements, transactions or arrangement that may require the prior consent of / notification to the Authority (Council). • This is a specialist area and requires expert input. That said, transparency, exchange of information and co-operation will facilitate any appropriate obligations on the Contractor (and Member States under the Agreement). • Financial arrangements downstream may also impact the financial payment system depending on its final formulation, including non-arm's length sales.	Expert input required in connection with the development of RRPs (under the Agreement) relating to unfair and / or uneconomic practices (in accordance with the requirements of the Agreement). See also "Undertakings" above.
Annual Reports	• Guidelines will need to be prepared to determine the format and content of a contractor's annual report to the Authority. Subject to specifically agreed confidentiality criteria, these should be made publicly available (or as a minimum, part thereof) under the transparency principle. • There also needs to be standardization in reporting. A template(s) needs to be devised for this purpose together with an analysis of actual performance against previously agreed performance indicators. • Though this clause speaks to "Annual Reports", there will be other specific contractor reporting obligations under the regulations.	*Guidelines for the Preparation of Annual Reports* to be drafted.

Clause relating to:-	Commentary	Action
Insurance	• Requirement to maintain insurance in accordance with approved plan of work. Annual evidence required. • Requirement to maintain with "financially sound and reputable insurers" – consistent with Good Mining Industry Practice. This is a specialist area, not least when combined with environmental liability insurance. Specific guidance and advice is required for the Authority to have a full understanding of products available, including deductibles, and their efficacy. • More prescriptive description of insurance requirements required. • See also "Environmental bonds and performance guarantees" above.	Discussions with contractors, the insurance industry (P&I clubs) and other stakeholders needed here to gain knowledge and understanding of insurance specifics, including limitations, exceptions and exclusions.
Suspension and termination of contract and penalties	• Wording from Exploration Regulations to be retained. However, clarification needed over *serious persistent and wilful violations*;[47] and what are considered fundamental terms of the exploitation contract? • Fundamental terms of the contract can be specifically defined in the contract. Serious and persistent can be clarified in guidance notes reflecting a penalty regime.	Technical paper to clarify meaning of *serious persistent and wilful violations* based on existing best practice in extractive industries.
Revision	• The revision clause in the Exploration Regulations is of greater significance to exploitation contracts. • The clause is to be taken from Annex III, Article 19 of the Convention. As an immature industry, it will be difficult to anticipate all eventualities. However, some guidance should be considered in terms of understanding the concepts of *inequitable, impracticable and impossible* contained in Annex III, Article 19. • Equally, any review periods provided for in the regulations could ease the operation of this contractual provision. • Transparency of any agreed changes to the terms of a contract is key; hence a disclosure provision should be reflected, subject to confidentiality provision. • Could include suspension of operations for market conditions (note: obligations under an EMP to continue).	Technical paper to clarify meaning of *inequitable, impracticable and impossible* referenced in Annex III, Article 19, Convention.

[47] Annex III, Article 18 of the Convention.

2. Summary of high level issues

High level issue	**Commentary**
1. Information and data – what we know, what we don't know, what we need to know	The Authority is currently operating in a data deficient environment, particularly as regards resource data and environmental data. It is recommended that the Authority establish a fit-for-purpose data management strategy as a matter of priority. This is relevant for both the development of the regulatory framework and on-going informed decision-making.
2. Activities in the Area - Competence of the Authority and of other relevant competent international organizations	Competencies of the Authority in the Area and those of other relevant competent international organizations to be identified in order to clarify areas of responsibility and identify possible gaps in regulating activities in the Area.
3. The transition between exploration and exploitation phases	Aside from the issue of the extension of contracts for exploration, two further issues are relevant. First, the need to develop a process and procedures for prior environmental impact assessment for specific activities undertaken under a contract for exploration.[48] Secondly, for reasons of commerciality, it is recommended that the concept of a provisional mining licence[49], while having some merit, is forgone and that a substantive review period against pre-determined performance indicators is undertaken within a 5-year period from the commencement date of a contract for exploitation. Further work also needs to be undertaken to clarify the nature of a "preference and priority" and the procedures to transfer the same into an "exclusive exploitation right".

[48] See IBSA/19/LTC/8.
[49] See ISA Technical Study: No. 11 at page 4 for background.

High level issue	Commentary
4. Risk assessment, evaluation and management	The development of risk assessment and risk management standards and systems (for environmental, occupational health and safety and operational risk) is fundamental to the orderly development of activities in the Area. It is recommended that the Authority gains a better understanding of the risk profile (hazards and classification) of anticipated exploitation operations through dialogue with contractors and other relevant experts plus ability to draw on existing risk frameworks in related sectors, including oil and gas.[50] Risk is best managed by contractors. Industry to be encouraged to collaborate in risk assessment and management matters?
5. Time limits and costs	The need for certainty and fairness in the regulatory process points toward clearly prescribed time limits. Time-scales can be benchmarked against best practice mining regimes and be modified to take account of the decision-making structure of the Authority. Equally, the operation of the framework must be cost-effective and the sharing of its costs discussed. For clarification, this high level issue points to timelines in the application, associated review and appeal processes / mechanisms; the industry must have certainty over when decisions will be made while any public review processes must be afforded reasonable timelines for comment.
6. Confidentiality	A tension could exist between the existing confidentiality provisions contained in the Exploration Regulations[51] and the transparency demands of an exploitation framework, particularly public access to relevant data and information and participation in the environmental decision-making process.[52] There is a growing call in the extractive industries for greater levels of transparency through information disclosure[53] and a presumption that information relating to contracts and

[50] Other assessment frameworks recommended by stakeholders includes: *Assessment Framework for Scientific Research Involving Ocean Fertilization* LC 32/15, annex 6 (IMO parties); *Specific Guidelines for the Assessment of Carbon Dioxide for Disposal into Sub-seabed Geological Formation* LC32/15 annex 8.
[51] See Regulations 36 and 37 PN Exploration Regulations.
[52] See The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Aarhus, 25 June 1998. See also *IFC Performance Standards on Environmental and Social Sustainability*, January 2012.
[53] For example, the Extractive Industries Transparency Initiative.

High level issue	Commentary
	activities under contracts is publicly available[54], save for confidential information.[55] The issue of publicly available information and meaningful stakeholder participation in the decision-making processes is a policy matter for the Authority in discussion with interested stakeholders. This issue should be prioritised. Given the number of views expressed by stakeholders, a technical paper is required to set out the legal position and possible options based on best practice and trends. Alternatively, an option(s) may be proposed in the draft exploitation regulations for consideration by stakeholders together with appropriate commentary. It should be emphasised that there is general consensus by stakeholders on the public availability of environmental data and information and acknowledgement of a transparent process.
7. Effective protection for the marine environment from harmful effects	The importance of a number of environmental protection and mitigation tools under the Convention and the procedural obligations to deliver the same is vital. It is recognised that the Authority and other actors should adopt an ecosystem-based approach to environmental management in the Area. Additionally, it is recognised that specific criteria and guidance must be developed for concepts such as "significant adverse change" and "vulnerable marine ecosystems"; to this end the Authority can draw upon existing best practice definitions[56] and work already in progress across the stakeholder base. Specifically, some stakeholders have stressed a priority requirement for, inter alia: 1. The development of an Environmental impact assessment process; and 2. The development of Strategic envionmental (impact) assessments and Strategic environmental management plans (regional). The importance of cumulative impacts is highlighted together with the harmonisation / integration of SEAs / SEMPs with project-specific EISs and EMPs.

[54] *Model Mine Development Agreement*, MMDA 1.0, International Bar Association.

[55] Relating to "commercial", "economic", "property" and "business secrets" etc.

[56] For example, under the UN FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas and the Convention on Biological Diversity's criteria for Ecologically or Biologically Significant Marine Areas (EBSAs).

High level issue	Commentary
8. Adaptive management	This will require detailed input from relevant stakeholders. As observed by one stakeholder, recognising a staged approach to exploitation is one thing but it is a challenge to achieve in practice where due consideration needs to be given to an operator's economic viability. In view of exploration activity and investments already made, balancing respective interests here may be difficult. The New Zealand Government has made a further offer to work with the ISA to elaborate the approach to adaptive management in the exploitation framework. Perhaps following this, a working group on adaptive management and the application of the precautionary approach can be developed. A broader range of opinions and input toward adaptive management will ultimately be required.
9. "Internationally recognized standards" and their significance in exploitation activities	Standard(s) development as part of good mining industry practice[57] is a pre-requisite to the orderly development of the industry and a key consideration for the regulatory framework across a broad-range of subject matter. The content and credibility of industry standards should be delivered through consensus-building and a multi-stakeholder approach to reflect best available science and technical information where applicable. Many international standards[58], including those developed in the oil and gas sector, will be directly applicable to exploitation activities. Indeed many standards have been suggested by stakeholders.[59] Others will require modification and development. Standard(s) development should, primarily, be an industry-driven initiative.[60] An objection has been voiced to this last statement. However, focus should be placed on the word "primarily"; this does not mean "exclusively". It is fundamental that the industry buys into and initiates the development

[57] See Annex III, Article 17(1)(b)(xii) of the Convention relating to the adoption and application of mining standards and practices.

[58] Also need to consider regional or country standards which may be equivalent to, based on or have a higher level of standard. E.g. EU Regulation (EC) No 761/2001 Eco-management and audit scheme (EU).

[59] For example: Code for Environmental Management of Marine Mining (IMMS); ISO 14001; ISO 9001/9002; ANZI Z10 or OHAS 18001 (health and safety management system-related).

[60] Ultimately standards will need to be backed-up by the necessary regulatory checks and balances: reporting, notification, inspection and independent audit obligations and procedures. That is, a general question of how standards will be enforced.

High level issue	Commentary
	of standards as these will have economic impact. Standard development would however be subject to multi-stakeholder input and dialogue.
10. Sponsoring State(s) and the Authority – a clear division of duties and responsibilities?	It is not believed that the division of duties and responsibilities is clearly defined between a sponsoring State and the Authority. This relates to matters including enforcement and monitoring / inspection, offence and penalty systems, liability and responsibility of a contractor etc. From a contractor's perspective there is the potential for a duplicative regulatory and financial burden. This needs to be clarified and duties and responsibilities more clearly defined. Equally, this also points to effective co-operation between the Authority and a sponsoring State. Matrix setting out duties and responsibilities to be developed.
11. "High-grading" of mineral deposits	The issue of "high-grading" was addressed in the Stakeholder Survey and drew a number of diverging stakeholder opinions including: that a grading policy should be a matter for commercial determination; that low-grade mining could become economical over time as technology develops and that high-grading potentially minimizes the environmental footprint ("untouched" lower grade areas). Other stakeholders made reference to the exploitation of an "average balanced grade". The issue of grading policy needs further consideration with interested parties, including "typical" break-even cut-off grades (economic and technical feasibility) and environmental policy considerations. Many, if not the majority of responses reflect this to be solely a commercial issue and that it is not appropriate to set a breakeven cut-off grade. Diverging stakeholder opinions remain in respect of this high level issue. There are a number of other areas within the draft framework that point toward the need to discuss the ISA's position, as regulator, in connection with the regulation of commercial activities and determining "commercial viability". This high level issue also links to the development of a financial mechanism. Financial terms can have an impact on the economic behaviour of future exploitation operators. In connection with High level issue no. 16, how do other comparable regimes handle, assess or oversee these issues?
12. Other: existing best	Other aspects of relevance include the need to draw on existing best practice and not to "reinvent

High level issue	Commentary
practice, learnings, co-operation and information-sharing	the wheel" and to identify any defects and learnings from the current exploration application and implementation process, including new ways of doing business identified by the Commission. Additionally, the general need for co-operation and information sharing will be fundamental to the effective operation of the regulatory framework.
13. ISA stakeholder consultation	The development / drafting of a clear and simple communication, transparency and participation strategy by the Authority. The "who, how and when" will the Authority engage with Members and all stakeholders.
14. Mining inspectorate / directorate[61] / environmental regulator	This issue was originally "excluded" from a current work plan. However, a number of stakeholders wish to understand the context / practicalities of how the Authority will manage and administer activities: what authority will a mining directorate be given? How and when will enforcement measures be taken including cure periods? This review must also include the need for a mining registry and the registration of security interests by financial instiutions where applicable. Appropriate land-based / oil and gas regulatory regimes should be benchmarked, including staffing and resourcing requirements. Member States are kindly requested to offer any guidance or assitance in this area.
15. An interim framework	The basic draft framework at Section 2 of this document is a starting point to facilitate constructive dialogue with stakeholders and to aid identification of further areas of study and expert input. As a consequence of 1. above, the framework will remain very much "work-in-progress" until such time as knowledge gaps can be filled.
16. One exploitation framework?	It is recommended at this stage that the core rules, regulations and procedures (RRPs) are set out in one over-arching framework. Resource-specific RRPs can be developed at a later stage. However, an initial focus will be placed on a regulatory framework for polymetallic nodules.

[61] Although the duties and responsibilities of the Authority as a regulator are not specifically defined, the Convention provides broad powers for exercising control "as is necessary (Article 153(4)) and "incidental powers" under Article 157(2).

3. Draft action plan / priority deliverables

This section 3 contains (1) a summary of priority deliverables for the next 12-18 months that the Commission will present to the Council during its 21st Session and (2) a revised Action plan and prioritization, based on stakeholder comments. The Commission proposes that further work is performed on the Action plan, including target / realistic milestone dates[62] and a full costing as its delivery will inter alia be dependent on adequate resources being made available.

[62] In March 2015, the Action plan attempted to identify priority areas in a simple way by means of priority initiation dates, being the anticipated upcoming meetings of the Commission. Namely: Priority A: Initiate by July 2015; Priority B: Initiate by February 2016 and Priority C: No action anticipated at this time.

Exploitation code: Priority deliverables for the next 12-18 months

Task area	Commentary
1. **A zero draft of exploitation regulations and standard contract terms** based on the working structure agreed by the Commission	This is vital to provide a higher degree of legal certainty to facilitate investment decisions being made by investors and define key exploitation rights, contract duration, size of exploitation area etc. and related obligations, including environmental obligations. It is intended that the drafting be undertaken by an expert working group (external consultants), including Secretariat personnel. An initial draft deliverable to the Commission in February 2016 will be circulated to stakeholders in March 2016 and presented to the Council in July 2016 together with next steps.
2. **Financial modeling for proposed Financial terms and payment mechanism**	To develop a payment mechanism for exploitation activities, detailed financial and economic models based on proposed business plans are needed. External consultants will be required here. This is a key priority for contractors and the Authority.
3. **Data management strategy and plan**	The Secretariat is to produce a fully costed data management strategy and technical implementation plan based on the advice of the Commission by February 2016. The project is likely to require significant funding in the next biennium budget.
4. **Environmental assessment and management**	The Authority must develop an environmental impact assessment process and develop its current draft environmental impact statement for adoption by contractors. Additionally, the Authority must develop a strategy for strategic (regional) environmental management plans, building on its experience with the establishment of an environmental management plan for the Clarion-Clipperton Zone. These areas require Terms of Reference but are likely to require input from external experts and / or working group(s) / workshop(s) in the next 12-18 months, as well as significant financial resources in the next budgetary cycle.

5.	**Adaptive management approach**	A key tool for environmental protection. The New Zealand Government has offered to work with the Authority to develop this.
6.	**"Serious harm"**	A key term in the exploration and future exploitation codes. This needs to be operationalized through background studies, expert input and subsequent review workshop.
7.	**Responsibility and liability**	Legal working group (external experts) will need to be formed to explore and develop further rules and principles. The process will be kick started in the next 12-18 months by a study to be commissioned from external consultants but is seen as a long-term project.

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
Preamble	• To be drafted as part of zero draft of exploitation regulations.	A
Use of terms and scope	• This section will evolve as the regulatory framework evolves. Definitions should reflect internationally agreed and accepted definitions where possible. Involvement of marine jurists and linguists.	A
Form of applications	• *Guidelines for the Preparation of a Plan of Work for Exploitation* need drafting, including a standard application form. • Development / licensing of an online application management system. • Thought to be given to "new ways of doing business" as highlighted by the Commission in the context of exploration and its impact(s) on exploitation applications. • Explanation of "new ways of doing business" to be articulated by the Commission.	B C A A
Financial and technical capabilities	• *Guidelines for the Preparation and Evaluation of information relating to Financial capability and Technical capability* to be drafted. These can reflect best practice from national regimes and detailed responses in the Stakeholder Survey.	B
Previous contracts with the Authority	• The term "preference and priority" needs to be clarified (Secretariat).	A
Undertakings	• A working paper requires preparation by an expert familiar with the international trade issues raised by Annex, Section 6(1)(b) of the Agreement and specific RRPs drafted as required by Section 6(6) Agreement.	B
Equity interest in a joint venture arrangement	• Action plan for operationalization of the Enterprise to be developed.	C
Feasibility study	• *Guidelines for the Preparation and Evaluation (criteria) of a Feasibility study* to be drafted. Take contents of TS No. 11 as starting point. • Have any "blueprint" feasibility studies been developed for exploitation activities which can be adopted by the Authority? (To ensure consistency and comparability in applications).	B
Environmental impact statement	• EIA process(es) need to be outlined. Guidelines for Environmental impact assessment process / Best	A

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
	practice manual to be drafted. May require working group. • Draft EIS template in Technical Study No.10 to be reviewed and updated. Use SPC-EU DSM Project EIS template as starting point and circulate to stakeholders. • *Guidelines for the Preparation and Evaluation of an Environmental Impact Statement* to be drafted. Should include simple rating criteria (e.g. US EPA rating criteria). Needs to be resource-category specific.	A B
Environmental management plan	• EMP template needs to be drafted. Post EIA / EIS development above. • *Guidelines for the Preparation and Evaluation of an Environmental management plan* to be drafted. • Similar to EIS, it is recommended that the above be undertaken by an expert and a draft template and guidelines circulated for comment by interested parties. • *Guidelines for the design and monitoring of Preservation Reference Zones and Impact Reference Zones* to be developed. This may require an expert working group. • Possible multi-stakeholder workshop(s) post development of EIS and EMP templates.	B
Social impact assessment and action plan	• Discussion to be advanced on a social action plan for the Area and a call to stakeholders to make contributions to this discussion. If integrated with EIS,should be part of above EIA / EIS process above.	A
Financing plan	• Template Financing plan to be drafted (content requirements).	C
Closure plan	• Template closure plan and *Guidelines for the Preparation and Implementation of a Closure plan (including post-decommissioning surveys and monitoring)* to be drafted.	B
Size of exploitation area covered by the plan of work	• There are matters of policy to be addressed by the Council and stakeholders. Specific guidelines where applicable then need to be drawn up to identify the criteria to be applied in assessing the size and location of exploitation area(s). It is likely that additional expert input is required here and / or initial thoughts of contractors as to their proposed exploitation areas and production requirements.	A
Public review of the environmental impact statement and environmental management plan [and social impact	• A working paper needs to be drafted setting out the public participation options and procedures available, including independent expert review(s), based on stakeholder submissions and best practice regimes. The paper must then be circulated to stakeholders for comment.	B

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
assessment and closure plan]		
Consideration by the Legal and Technical Commission	• Detailed guidelines will be needed in respect of evaluation criteria to be used by the Commission. • A technical working paper needs to be drafted to elaborate on the concept of *sound commercial principles* (see 1994 Agreement, Annex, Section 6(1)(a)). • A technical working paper is required to elaborate on *substantial evidence* of risk of serious harm to the marine environment in the case of area(s) disapproved for exploitation.	B B A/B
Consideration and approval of plans of work for exploitation by the Council	• Should any specific Council procedures and criteria be developed here? Yes. To be included in assessment / approval procedures for Council.	C
The Contract	• Authority to provide an indication of "likely" specific conditions which may be imposed / agreed.	A
Rights of the contractor	• Consideration to be given to this by the Secretariat (clarity on rights being granted). Proposed language to be included in zero draft of exploitation regulations.	A
Obligations of the Authority	• Consideration to be given to this by the Secretariat (clarity on Authority's obligations). First question, are there any examples of gaps or ambiguities beyond Convention / Agreement in the obligations of the Authority? Secretariat to clarify.	B
Legal title to minerals	• Consideration of the phrase "recovery in *accordance* with the Convention" requires a technical working paper to be drafted.	A

Duration of contracts	• Further understanding of contractor development and production models and plans is required here.
	• A balance needs to be established between the commercial requirements of contractors and the ability of the Authority to amend terms and conditions in accordance with revised RRPs.
	• A working paper needs to be developed for circulation to stakeholders.
	• Guidelines need to be developed for the following:
	  ○ Criteria for contract duration – resource specific.
	  ○ Application and evaluation criteria for a substantive review.
		A

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
	○ Application and evaluation criteria for renewal of an exploitation contract.	
Performance requirements	• *Guidelines for the evaluation of Production performance requirements under a contract for exploitation* to be drafted. To include key performance criteria and indicators. • Council to consider as a matter of policy, in discussion with relevant stakeholders, a cut-off point for commercial inactivity. Address under "Duration of contracts" above. • No subsidization: how will this be defined, identified and eliminated in practice? (Address under "Undertakings" above).	C A B
Avoidance of unnecessary waste in respect of the resources of the Area	• A policy in respect of waste management needs to be developed.	B
Use of sub-contractors	• Authority to elaborate intentions / operationalization of this element. Parallels with land-based regimes to be considered.	B
Vessels operating in the Area	• Discussions between the Authority and the International Maritime Organization to be formalized.	A
Protection of submarine cables and pipelines	• Discussions between the Authority and relevant representative organizations formalized.	A
Health and safety	• To determine additional international / DSM-specific standards / development of best practice Emergency Response Plan and Procedures. • *Guidelines on the placing of floating installations and related safety zones in the Area* to be developed in conjunction with IMO.	B
Training	• To establish areas of skills and talent shortages key to the development of the DSM industry.	C
Periodic review of the implementation of the plan of work for exploitation	• *Guidelines on Procedures and Information Requirements for Review* to be drafted.	B/C

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
Termination of sponsorship	• To clarify post termination obligations for a contractor. Authority to prepare / commission a study of options available.	C
Responsibility and liability	• Legal workshop / independent working group required to explore and develop further principles of responsibility and liability in the Area. Priority deliverable.	A
Protection and preservation of the marine environment	• This area requires the formation of targeted expert workgroups consisting of a broad range of stakeholders, including relevant international organizations. Specific areas to be identified including RRPs for "dumping".	A / B
Environmental management	• Specific guidelines on environmental management systems to be developed together with reporting requirements.	B
Emergency orders	• Secretariat to review contemporary best practice in the field of marine disaster management and responding to emergency situations including the lessons learnt. • Consider working group with IMO and relevant regional organizations.	B
Strategic environmental management plan	• Work plan / terms of reference to be scoped for SEMPs. Regional workshops and co-operation to be developed to formulate regional SEAs and SEMPs. Priority deliverable.	A
Environmental bonds and performance guarantees	• The interaction between commercial insurance and bond mechanisms needs to be investigated together with the terms and conditions, including appropriate quantum of any bond.	B
Restoration and rehabilitation of the marine environment	• Obligation to consider as part of Environmental management plan?	B
Adaptive management approach	• Adaptive management in connection with exploitation activities in the Area requires further elaboration with interested parties. Priority deliverable. Offer from New Zealand government to assist development.	A
Seabed sustainability fund	• A working paper to be drafted articulating the concept and objectives of such a fund for circulation to interested parties.	B

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
Environmental liability trust fund	• As above. Consider as part of "Responsibility and liability" priority deliverable?	A/B
Human remains and objects and sites of an archaeological or historical nature	• Must be considered as part of Social impact assessment process.	A/B
Confidentiality of data and information & Procedures to ensure confidentiality	• Confidentiality is raised as a High-level issue.	A
Recommendations for the guidance of contractors	• The process of issuing recommendations by the Commission needs review.	C
Duty to co-operate	• Needs operationalizing: specific expectations / obligations?	A/B
Inspection	• Develop a working paper setting out a suggested structure and options, including funding, for the operation of an inspection regime. Independent review board?	C
Offences & penalties	• Desktop review to be undertaken on existing / comparable regimes. • Interaction with sponsoring State offence and penalty regime to be understood.	B
Settlement of disputes	• A technical working paper needs to be prepared to set out dispute resolution options under the Convention.	C
Annex II Contract for exploitation		
"Dealings" or arrangements	• Expert input required in connection with the development of RRPs (under the Agreement) relating to unfair and / or uneconomic practices (in accordance with the requirements of the Agreement). See also "Undertakings" above.	B
Annual Reports	• *Guidelines for the Preparation of Annual Reports* to be drafted.	C

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
Insurance	• Discussions with contractors, the insurance industry and other stakeholders needed here to gain knowledge and understanding of insurance specifics, including limitations, exceptions and exclusions. See also "Environmental bonds and performance guarantees" above. The German Insurance Assurance has made an offer of help to provide input on relevant insurance aspects.	B
Suspension and termination of contract and penalties	• Technical paper to clarify meaning of *serious persistent and wilful violations* based on existing best practice in extractive industries.	B
Revision	• Technical paper to clarify meaning of *inequitable, impracticable and impossible* referenced in Annex III, Article 19 Convention.	B
High level issues		
Information and data – what we know, what we don't know, what we need to know	• It is recommended that the Authority establish a fit-for-purpose data management strategy as a matter of priority.	A
The transition between exploration and exploitation phases	• Clarification sought over the nature of "preference and priority". • Procedures to be developed on mechanism to transfer into an exclusive exploitation right.	A
Risk assessment, evaluation and management	• It is recommended that the Authority gains a better understanding of the risk profile of proposed exploitation operations through dialogue with contractors (identification of hazards and potential incident categories). • Onus placed on contractors to collaborate here with interested stakeholders?	A/B
Confidentiality	• Technical paper required to set the legal position and possible options based on best practice and trends / propose alternative(s) in zero draft of exploitation regulations.	A
Effective protection for the marine environment from harmful effects	• Specific criteria and guidance must be developed for concepts such as "serious harm / significant adverse change" and "vulnerable marine ecosystems". • Development of a precautionary risk management framework (see Risk assessment, evaluation and	A/B

Draft regulation description	Actions for operationalization of draft regulation	Priority Action (A, B or C)
	management above) together with adaptive management obligations (see below). • Develop EIA process in conjunction with stakeholders. • Develop Strategic environmental assessments and Strategic environmental management plans (regional).	A A A
Adaptive management	• Elaborate adaptive management approach for exploitation activities in the Area.	A
"Internationally recognized standards" and their significance in exploitation activities	• Standard(s) development should, primarily, be an industry-driven initiative. Authority to engage with relevant stakeholders to initiate a standard development process and framework.	B
Sponsoring State(s) and the Authority – a clear division of duties and responsibilities?	• Authority to initiate dialogue with sponsoring States to discuss way forward. • Develop a matrix setting out the division of duties and responsibilities.	B
"High-grading" of mineral deposits	• The issue of grading policy needs further consideration with interested parties, including "typical" break-even cut-off grades and environmental policy considerations. This now speaks to a wider discussion of "commercial viability" and the Authority's role as a regulator.	A
ISA Stakeholder Consultation	• ISA Communication, transparency and participation strategy – draft and circulate.	A
Mining inspectorate / directorate / environmental regulator	• Need to benchmark land-based / oil and gas mining (including mining registries) / environmental regulators.	B