Data Management Strategy Workplan

Expected outputs	Indicators	Targets	Baseline data	Means of verification	Estimated budget (in thousands USD)	Duration	Timeline
Outcome 1. The best available data and information effectively inform the decision-making of the ISA							
Output 1.1. DeepData effectively supports the scientific approach to developing, implementing and reviewing REMPs	# of data REMP reports	1 data report per region within two years of review	REMPs revised every 5 years, data reports available 2-3 years after review. Review of Indian Ocean data 60% completed.	ISA website, REMP page	100	Ongoing	Short-term
	# of completed external data quality reviews	Total of 5 reviews	2 technical experts engaged to review biological data in Indian Ocean region. Periodic workshops in the CCZ. Two reviews completed.	Scientific publications and ISA technical briefs			
Activities to achieve Output 1.1	**A1.1.a.** Collect, prepare and review data necessary for the specific regions						
	A1.1.b. Develop partnerships with relevant research institutions to perform technical and scientific reviews of data needed for the development of REMPs and APEIs						
Output 1.2. DeepData effectively supports compliance, monitoring and review of the ISA contractors' activities	% of data categorized and catalogued	100% of contractor data categorized, catalogued and summarized annually	75% historic data (before 2016) catalogued and categorized 100% current data (post 2016) categorized and catalogued	Secretariat CRP (Conference Room Paper) to LTC	150	Ongoing	Short-term
	% of cruise summary reports submitted to the ISA S-G	100% of contractor cruise reports summarized and visualized		S-G annual report & DeepData			
	# of reporting tools provided to LTC for annual report & periodic report evaluation	2 new tools created	0 tools	Secretariat CRP to LTC		18 months	Short-term
Activities to achieve Output 1.2	**A1.2.a.** Develop innovative methods for preparing and summarizing data reports for evaluation by the LTC						
	A1.2.b. Compile and disseminate an annual summary of ISA contractors' cruise activities in the Area						
	A1.2.c. Create tools to assist with the annual and periodic review of contractors' performance						
Output 1.3. New data visualization and analysis tools	# of implemented visualization tools	4 visualization tools	1		200	24 months	Short-term

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are created to facilitate the use and understanding of the data shared through DeepData	% of DeepData usage	10% annual increase	6% annual growth in the use statistics for 2022	MSR (Marine Scientific Research) report		Ongoing	
Activities to achieve Output 1.3	**A1.3.a.** Improve user-friendliness by upgrading DeepData's graphical user interface						
	A1.3.b. Develop interactive plots and other visualization tools to assist in data analysis						
	A1.3.c. Increase the number of partnerships with organizations, such as OBIS, to offer improved data visualizations and analytics,						
Outcome 2. Marine scientific research is advanced by increased quality and quantity of data in DeepData							
Output 2.1. The quality and standardization of data is improved by the effective use of the revised reporting templates by the ISA contractors	% of contractors using the revised reporting template	100% by 2026	<10% of contractors effectively using revised reporting templates in 2023	Secretariat CRP to LTC	100	12 months	Short-term
	% increase in taxon matching of taxonomic data in DeepData against the WoRMS taxonomic database	20%	>70% matching	Secretariat CRP to LTC			
Activities to achieve Output 2.1	**A2.1.a.** Provide support to contractors to ensure adherence to ISA data submission guidelines						
	A2.1.b. Develop standard operating procedures for the preparation of and curation of data submitted using the reporting templates						
	A2.1.c. Organize and conduct taxonomic data submission workshops and meetings with contractors						
	A2.1.d. Organize tailored training activities on reporting templates to ensure compliance with data submission requirements analysis						
Output 2.2. Metadata is collated and integrated into DeepData following the FAIR data principles	# of metadata submission guidelines developed for metadata categories	1 detailed metadata submission guideline for each of the following: annual reports, reporting templates, photo and video, non-template data[1]	No guidelines developed yet	Publication of the guidelines on the DeepData page of the ISA website	50	24 months	Medium-term
	DeepData score for FAIR data evaluation	Passing score/evaluation for FAIR data evaluation	No FAIR score provided yet	FAIR data evaluation report			

[1] Non-template data includes all raw files that are not submitted in the reporting templates.

Expected outputs	Indicators	Targets	Baseline data	Means of verification	Estimated budget (in thousands USD)	Duration	Timeline
	% of files with associated DOI	70% of ISA data files have associated DOIs or persistent identifiers by 2027	No DOI exists for non-confidential digital data files	Query the persistent identifier column in the digital data inventory			
Activities to achieve Output 2.2	**A2.2.a.** Develop the required guidelines to ensure all digital files submitted to ISA have an associated persistent identifier						
	A2.2.b. Establish data repository and develop associated landing pages for each data asset contained in the ISA data inventory						
	A2.2.c. Establish ISA as a consortium member on a commonly used DOI service provider thereby facilitating the registration of DOIs by contractors through ISA						
	A2.2.d. Conduct FAIR data assessment for DeepData non-confidential data						
	A2.2.e. Encourage contractors to enroll and register for the ISA DOI consortium membership account						
Output 2.3. Historical data is integrated into DeepData	% of historical data submissions catalogued and categorized	100% by 2026	60% of submissions catalogued	Annual MSR report	80	24 months	Short-term
	% of historical data converted to structured data	75% of historical data converted to structured format	38% converted to a structured format	Annual MSR report			
Activities to achieve Output 2.3	**A2.3.a.** Identify and catalogue historical data						
	A2.3.b. Conduct data gap analysis and resolve data gaps that prevent incorporation of historical data as structured data						
	A2.3.c. Transform historical data into compatible DeepData format						
	A2.3.d. Provision of historical data in DeepData						
Output 2.4. The interoperability of DeepData with other databases and data sources is improved and the sharing of data is enhanced	% of data types mapped to standardized format	100% mapping of scientific data to standardized data formats by 2028	Only biological data currently mapped to standardized format	# of citations in scientific peer-reviewed papers and books	100	24 months	Short-term
	# of DeepData variables interoperable with external data sources	Integrate with at least 2 external data sources (DNA, ocean pollution) to complement DeepData with non-contractor data	Infrastructure created to facilitate taxonomic DNA data integration	DNA data available in DeepData			
Activities to achieve Output 2.4	**A2.4.a.** Conduct data-mapping exercise to enrich DeepData						
	A2.4.b. Incorporate common data vocabularies in all DeepData data sets						

Expected outputs	Indicators	Targets	Baseline data	Means of verification	Estimated budget (in thousands USD)	Duration	Timeline
	A2.4.c. Create data synergies that complement existing data and integrate multiple data sources with DeepData						
Outcome 3. The capacity of developing States to use the best available deep-sea data is strengthened							
Output 3.1. Capacity-building activities dedicated to enhancing data management expertise in developing States are set up/designed	# of existing survey results evaluated to identify capacity development activities relevant to data management	At least 3	No existing survey results or published desktop literature reviewed	Report submitted to the S-G	150	24 months	Medium-term
	# of capacity development initiatives created to address the identified needs	Create capacity development initiatives to address 50% of identified needs	0	Report submitted to the S-G			
	% of women trained in data management	At least 50% of participants in ISA-led capacity-building activities are women	2 ADSR trainings conducted per year with a data management focus	Capacity development strategy report	150	12 months	Long-term
	# of regions represented during data management capacity development initiatives	All regions represented	No existing data management baseline data available				

Expected outputs	Indicators	Targets	Baseline data	Means of verification	Estimated budget (in thousands USD)	Duration	Timeline
	# of developing countries benefited	50 countries	No existing data management baseline data available				
	# of professors trained in ISA capacity development programme	At least 2 regional partner universities Creation of 2 courses by 2028	0	# of training certificates issued ISA Secretariat's capacity development report			Medium-term
Activities to achieve Output 3.1	**A3.1.a.** Offer training and certification in ISA best practices and data management to developing States						
	A3.1.b. Establish partnerships with universities to implement capacity-building initiatives in seabed data management and DeepData best practices						
	A3.1.c. Compile data relevant to scientific capacity development initiatives						
	A3.1.d. Priority needs of developing States related to data management are identified and inform the development of relevant capacity-building activities						
	A3.1.e. Write ISA policy brief highlighting the results of the data management needs assessment survey						
Output 3.2. Training materials on managing deep-sea data are created and disseminated	# of engaging materials such as video tutorials and guides created	Create 2 training materials per annum	0	Capacity development strategy report	75	12 months	Medium-term
	% of data-driven capacity development activities identified in the Capacity development report	10% annual increase in the total number of data-driven capacity development activities	0	Capacity development strategy report			
Activities to achieve Output 3.2	**A3.2.a.** Develop video tutorials on deep-sea data management best practices for various marine disciplines						
	A3.2.b. Write ISA policy brief informing policymakers on the data management capacity development activities						
Outcome 4. The capacity of the ISA to manage a global deep-sea database is maintained and further strengthened							
Output 4.1. Further developing and implementing persistent identifiers to uniquely identify DeepData data sets	% of data sets with persistent identifiers implemented	75% of contractors creating and submitting new digital data files with associated persistent identifiers	0	Secretariat CRP to LTC MSR report	-	24 months	Medium-term

Expected outputs	Indicators	Targets	Baseline data	Means of verification	Estimated budget (in thousands USD)	Duration	Timeline
	% of historical data sets with persistent identifiers	80%	0		-		
Activities to achieve Output 4.1	**A4.1.a.** Evaluate the current data set identification practices used by the ISA to identify any limitations or areas for improvement						
	A4.1.b. Design a framework that outlines the procedures and guidelines for assigning persistent identifiers to data sets						
	A4.1.c. Regularly monitor and evaluate the implementation of persistent identifiers to assess their impact on data set identification						
Output 4.2. Guidelines on data governance and usage by stakeholders are developed and disseminated	# of data guidelines generated	3 data governance guidelines created by 2025	0	ISA website	75	18 months	Long-term
	# of tools created to monitor data citations	Tools created to monitor and report the # of citations of DeepData data	0	ISA website			
	A4.2.a. Develop and improve data privacy and security architecture and infrastructure of DeepData						
	A4.2.b. Develop tools to monitor the use of data from DeepData and its contribution to the common heritage of (hu)mankind						
	A4.2.c. Develop DeepData data licensing guidelines						
	A4.2.d. Create framework for access, sharing and use of data in DeepData						
					Total		
					1,230.00		