

DEEPDATA IN A NUT SHELL

Background

- The mandate of the International Seabed Authority (ISA), on behalf of the State parties to the United Nations Convention on the Law of the Sea (the Convention), is to administer the mineral resources and control and organize current exploration activities, as well as future mining activities, in the Area for the benefit of mankind as a whole.
- Under Article 143, paragraph 2 of the Convention, ISA is required to promote and encourage the conduct of marine scientific research with respect to activities in the Area (the seabed and subsoil thereof beyond national jurisdiction), and coordinate and disseminate the results of such research and analysis when available. This includes marine scientific research in relation to both living and non-living resources.
- The commitment of ISA is reflected in the Strategic Direction 4, as set out in ISA's Strategic Plan for the period of 2019-2023, aiming to share data and information in an open and transparent manner (SD 4.3) and to promote access to non-confidential information and data, in particular those data relating to the marine environment (SD 4.4).

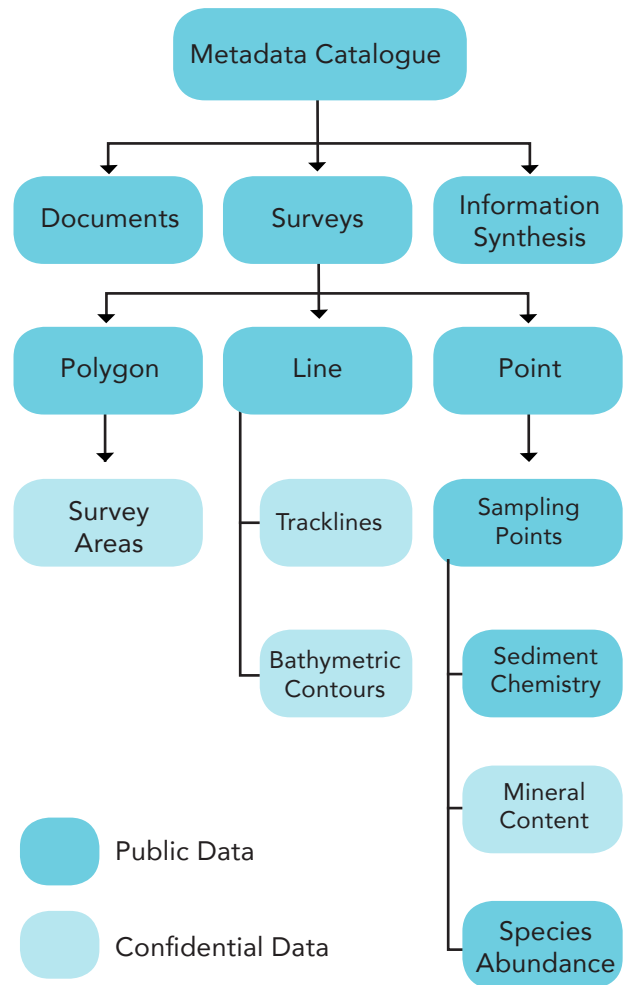
What is *DeepData*?

- In 2002, the Legal and Technical Commission (LTC) formally identified the need for the ISA to collect and centralize systematically all data and information on marine mineral resources. Preliminary discussions on how to operationalize such responsibility started soon after the signature of the first contracts for exploration of polymetallic nodules in 2001 (ISBA/8/C/6 para.12).
- The Secretariat started to assemble the first Central Data Repository (CDR) in 2000, succeeding the initial ISA's database of polymetallic nodule resources of the Area, called POLYDAT (ISBA/5/C/6). In 2003, following the LTC request, the CDR was then expanded to include information on all types of mineral resources under exploration namely: polymetallic nodules, cobalt-bearing ferromanganese crusts and polymetallic sulphides (ISBA/9/LTC/3).
- In 2015, the LTC further recommended that a data management strategy be formulated as a matter of priority. The rationale for this echoed the need to ensure that the necessary information be accessible in the context of the development of the draft exploitation regulations and sound environmental protection measures (ISBA/21/C/16).
- Subsequently, a dedicated working group was established within the LTC. Its main functions were to assist in the formulation of the data management strategy and related issues, and make recommendations for implementing routines and technical means to manage all data and information in a structured manner (ISBA/22/LTC/15).
- After several years of work, a new database has been developed. This database, called "ISA Deep Seabed and Ocean Database" (*DeepData*) has been designed to serve as a spatial, internet-based data management system. Its main function is to host all deep-seabed activities related data and in particular, data collected by the contractors on their exploration activities as well as any other relevant environmental and resources related data for the Area.

What kinds of data does DeepData contain?

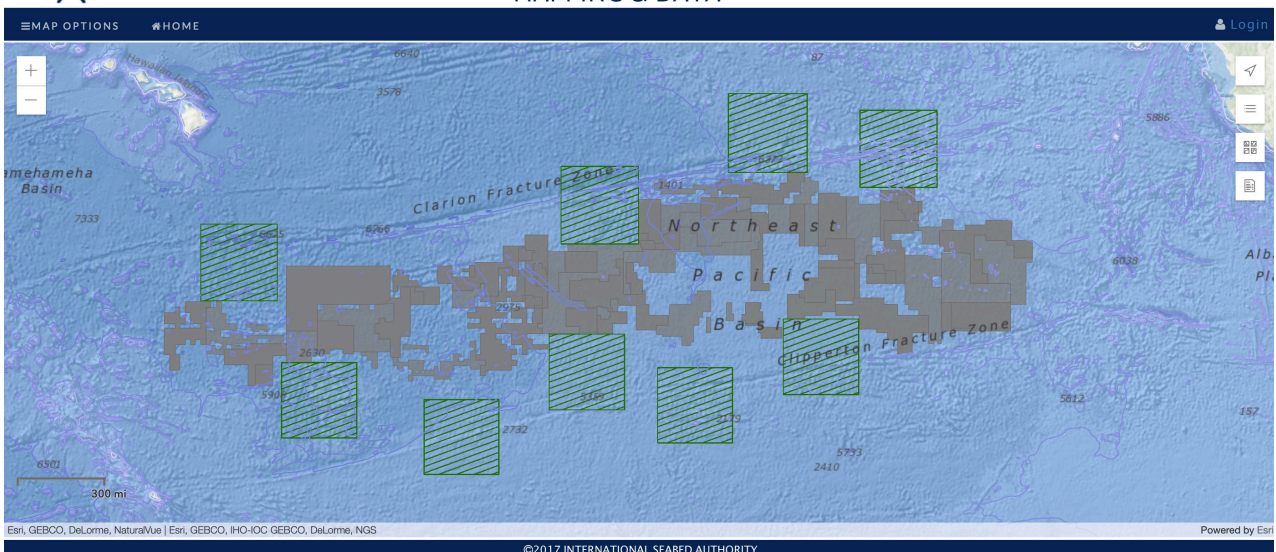
- *DeepData* contains information on mineral resource assessment (geological data) and environmental baseline/assessment data. However, only the environmental data will be accessible to the public. This will include biological, physical and geochemical parameters of the marine ecosystems from the seafloor to the ocean surface. The geological data is formally identified as confidential in the regulations on prospecting and exploration of mineral resources (ISBA/19/A/9, ISBA/19/C/17, ISBA/16/A/12/Rev.1, and ISBA/18/A/11).
- The types of data to be submitted to ISA as well as the procedures to be followed to ensure confidentiality of the data are also clearly provided in these regulations.
- Contractors are required to submit the metadata and results of their sample analysis from exploration surveys in contract areas, using the reporting templates published by the LTC. Such templates are to be found in the *Recommendations for guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area* (ISBA/19/LTC/8) and for the content, format and structure of annual reports (ISBA/21/LTC/15, Annex IV).

Types of Data in DeepData



INTERNATIONAL SEABED AUTHORITY

MAPPING & DATA

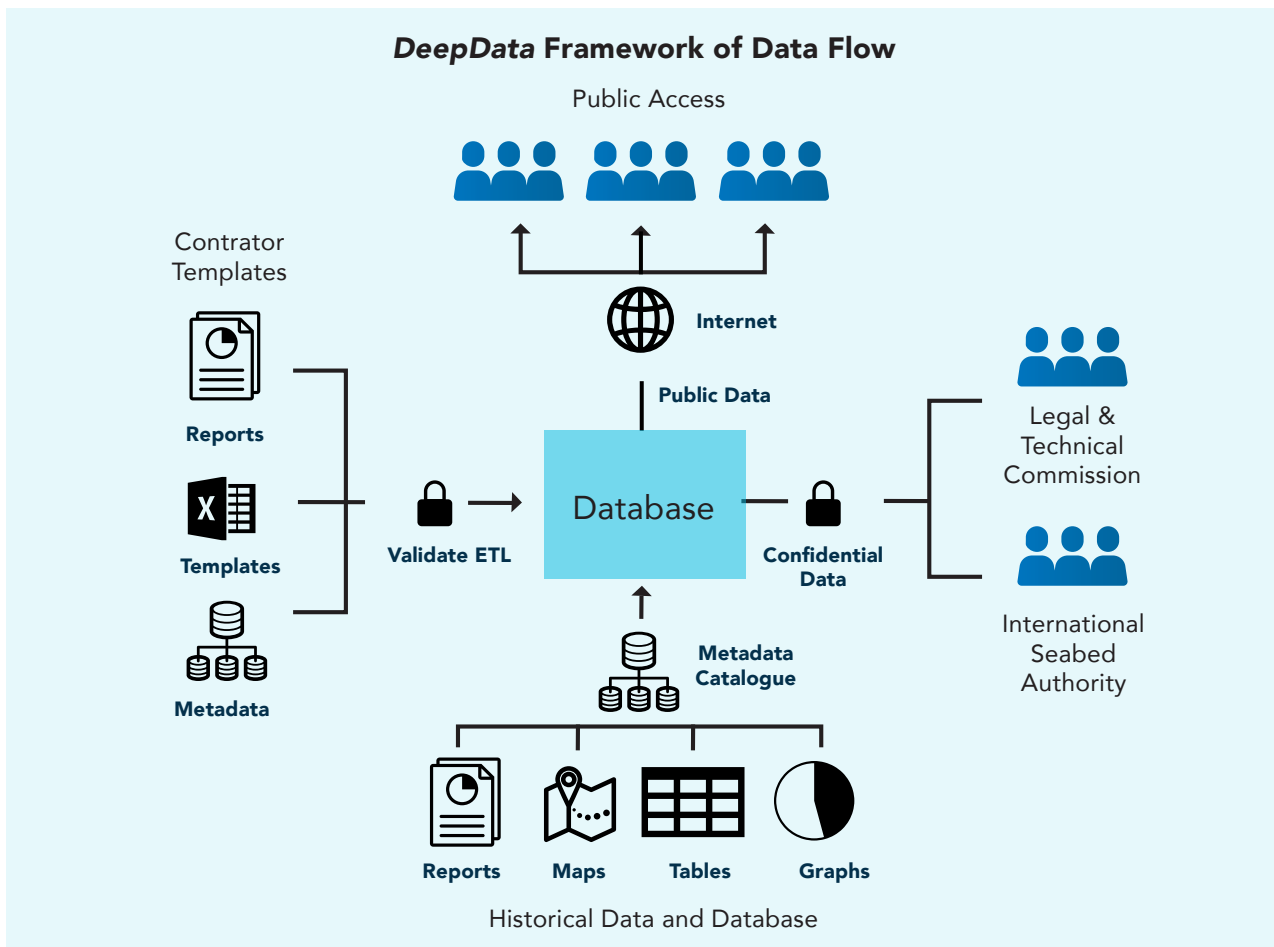


Screenshot of DeepData

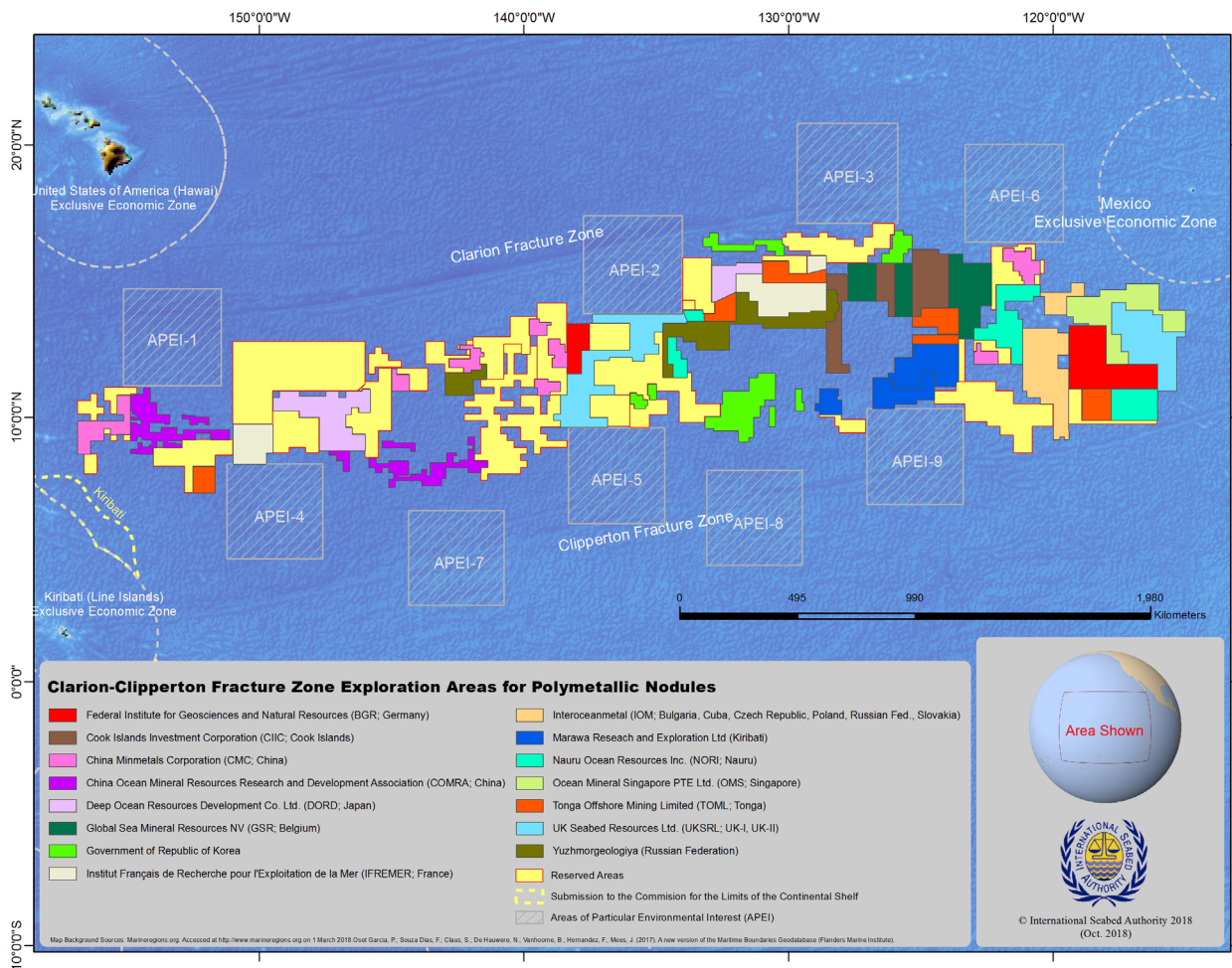
- The reporting templates developed to facilitate submission of structured geological and environmental data are available on ISA's website¹. In addition to "structured data" extracted from templates, *DeepData* also hosts "unstructured information," including maps, photographs, videos, graphics and relevant publications published in peer-review journals received from contractors.
- The Geographical Information System (GIS) is part of *DeepData* functionalities. As such, it allows visualization of contract areas, reserved areas and designated areas of particular environmental interest (APEIs). GIS information accessible through *DeepData* also include sampling locations containing biological, physical and/or geochemical parameters of the seabed sediments and water column.
- For clarity and transparency purposes, the ISA Secretariat will publish a file catalogue on regular basis, listing all publicly available data files contained in *DeepData*.

Who can use the data in *DeepData*?

User group	Functions
Contractors	Submit data, annual reports, and supplementary information
LTC members	Review contractor's performance through the review of annual reports, including digital data submission
Secretariat	Manage incoming data, and ensure overall maintenance of <i>DeepData</i>
Public (including scientists)	Access /download data relating to marine environment of the Area; analyze and synthesize data and produce various forms of data products



1 (<https://www.isa.org.jm/reporting-templates>).



Clarion-Clipperton Fracture Zone Exploration Area for Polymetallic Nodules and its designated areas of particular environmental interests (APEIs)

How can *DeepData* benefit different user groups?

- *DeepData* is the platform through which ISA will be able to fulfill its responsibilities, in particular the promotion of scientific knowledge for the benefit of mankind as a whole. Being the principal repository of data and information relating to activities in the Area, *DeepData* will be a critical tool to support ISA in organizing and controlling the activities in the Area; ensuring the effective regulation of prospecting, exploration and exploitation of deep-seabed mineral resources; effectively protecting the marine environment; and equitably sharing benefits derived from the conduct of marine scientific research in the Area.
- The Secretariat and LTC members will use *DeepData* when undertaking their respective tasks in relation to the evaluation of new

applications of plans of work for exploration and exploitation (e.g. assessment of mineable areas), monitor the performance of contractors (environmental, geological and technological aspects) through five-year periodic reviews and environmental impact assessments submitted by contractors.

- Information and data stored and consolidated in the *DeepData* will help identify baseline data requirements and data gaps that will guide contractors and other relevant stakeholders in designing monitoring, research and assessment programmes.
- *DeepData* will also serve the purpose to assess short, medium and long-term changes in the marine environment, contributing to design and implement regional environmental management plans, and environmental monitoring programmes.
- By becoming accessible to the international scientific community and the general public,

DeepData will further contribute to advancing marine scientific research and increase ocean literacy in the Area.

The Way Forward

- After the formal launch of *DeepData* on 25 July 2019, the Secretariat will continue to upload and digitize contractors' data that have been submitted in various formats, including historical data collected by pioneer investors.
- Exchange of data and information between *DeepData* and other existing external databases is also envisioned for near future activities. As such, the Secretariat has initiated the necessary process to become an associated data unit (node) to the Ocean Biogeographic Information System (OBIS) of the IOC-UNESCO, providing publicly available environmental data.
- As part of its forthcoming activities, the Secretariat will also develop a collaborative scientific platform for creating visual data products, transforming data into information. These will require a series of data synthesis and analysis, including modeling, mapping and spatial-temporal comparisons.



<https://data.isa.org.jm/isa/map/>

ABOUT THE INTERNATIONAL SEABED AUTHORITY

Made up of 167 Member States, and the European Union, ISA is mandated under the UN Convention on the Law of the Sea to organize, regulate and control all mineral-related activities in the international seabed area for the benefit of mankind as a whole. In so doing, ISA has the duty to ensure the effective protection of the marine environment from harmful effects that may arise from deep-seabed related activities.