



Ministry of Petroleum & Natural Gas
Government of India

NATIONAL DATA REPOSITORY

Come & Explore the
Rich Sub-Surface of India

National Data Repository
Directorate General of Hydrocarbons
(Ministry of Petroleum & Natural Gas)

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Directorate General of Hydrocarbons
(Ministry of Petroleum & Natural Gas)





“To me technology used wisely is a catalyst to magically transform the way we live ”

- Hon'ble Prime Minister
Shri Narendra Modi



“The National Data Repository will be a key facilitator by providing seamless access to India's entire E&P data through a digital medium to all investors and researchers ”

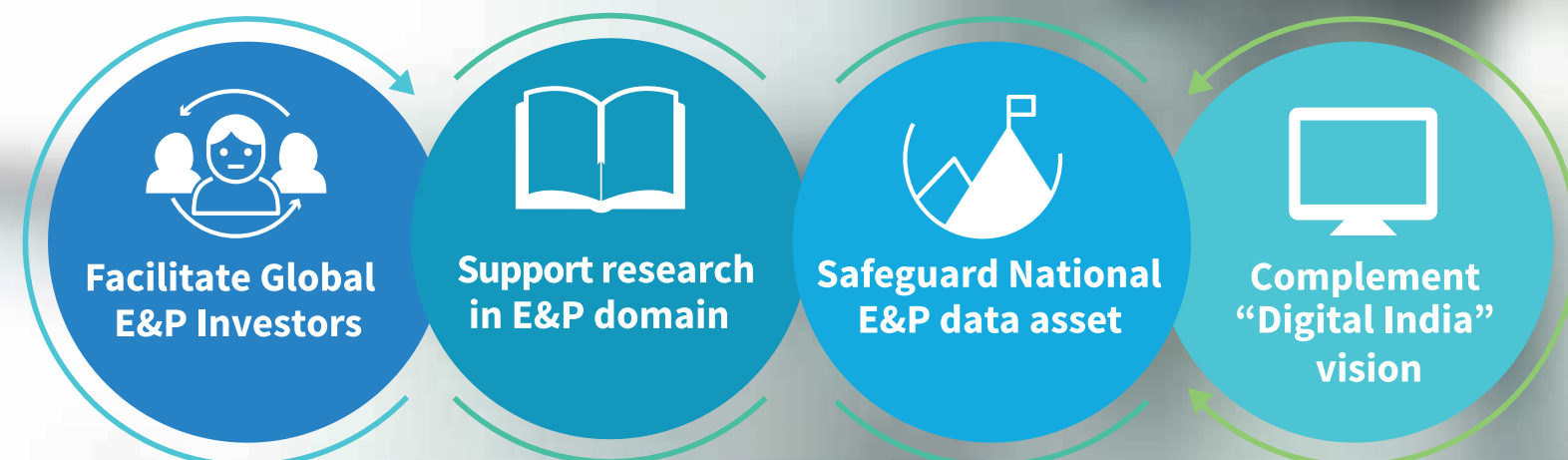
Minister of State (I/C) for Petroleum and Natural Gas
Shri Dharmendra Pradhan

VISION OF NATIONAL DATA REPOSITORY

NDR is an integrated centralized data repository of the entire Exploration & Production (E&P) data of India's 3.14 million sq. kms. sedimentary basins

To make India a favourable destination globally and garner investments in Oil & Gas sector, the Hydrocarbon Exploration & Licensing Policy (HELP) framework is on its way through the Open Acreage Licensing (OAL) mechanism

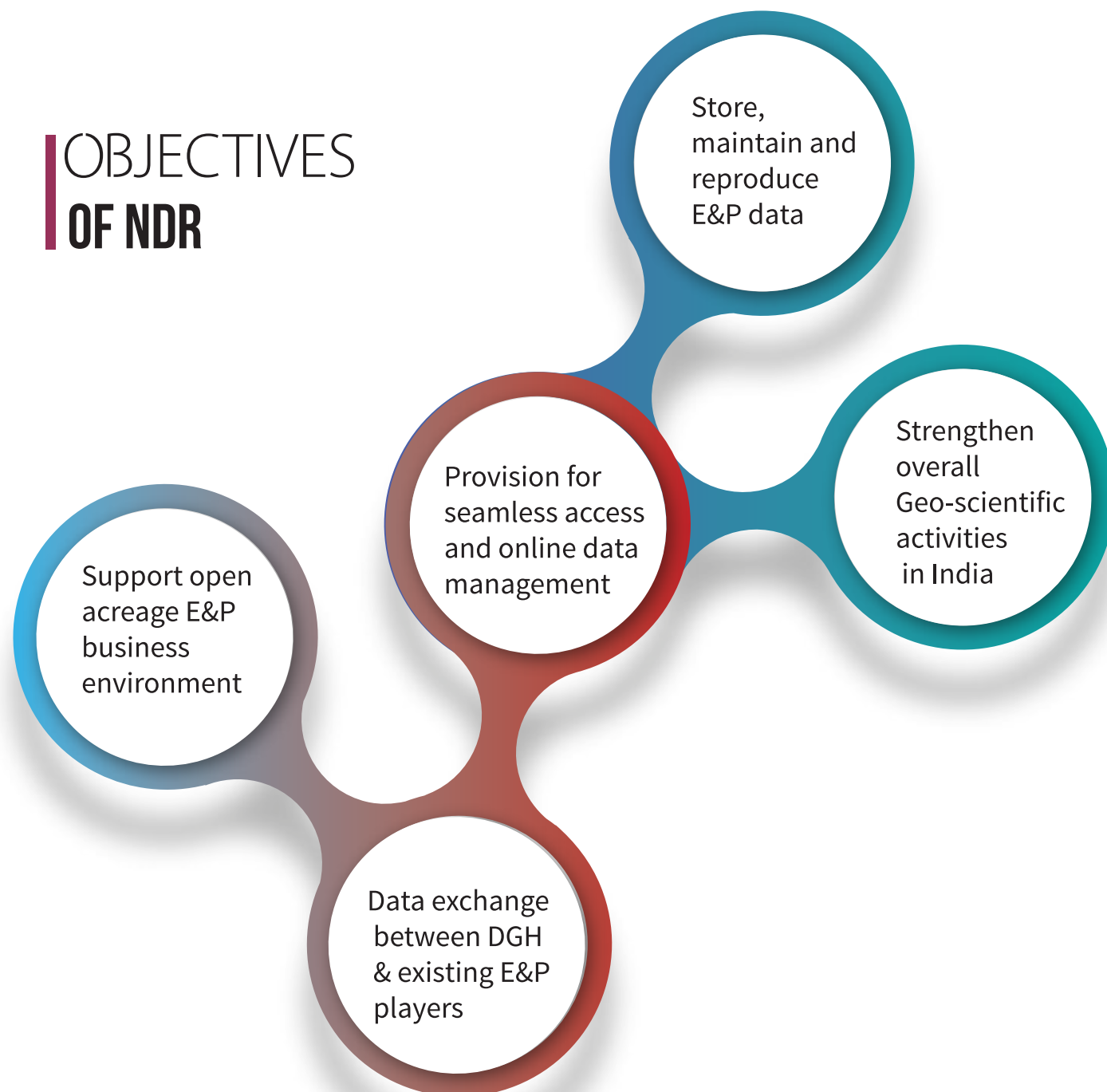
Setting up of NDR is the key facilitator for the new policy regime by providing a rapid jumpstart to the E&P activities in India



National Data Repository(NDR)

1. Government sponsored data bank for data collection & population at one place uniformly
2. Data management to promote & regulate E&P activity in the country
3. Data resting at a single source to supplement HELP through OAL process
4. Comprehensive understanding of G&G data & visualization feature to realize the vision of National Knowledge Hub

OBJECTIVES OF NDR



Features of NDR

- NDR is a data bank to preserve and disseminate Oil & Gas information and data in order to promote and encourage exploration and development activities in sedimentary basins across the entire country
- Availability of hydrocarbon exploration & production data of high quality and reliability
- GIS user interface to handle metadata
- Independent secured web based access
- Ability to store data (seismic & well logs) in online, near-line, offline modes
- Ability to load header information
- Common window for all concerned stakeholders in E&P domain including industries, government, research agencies etc.
- Online data viewing & ordering
- Vision for integration of Gas Hydrates, Shale Oil, Shale Gas, Geological data from GSI, Coal in reference to CBM, and environmental data
- Seamless data flow and data exchange with institutions like NGRI, GSI, NIO, etc.

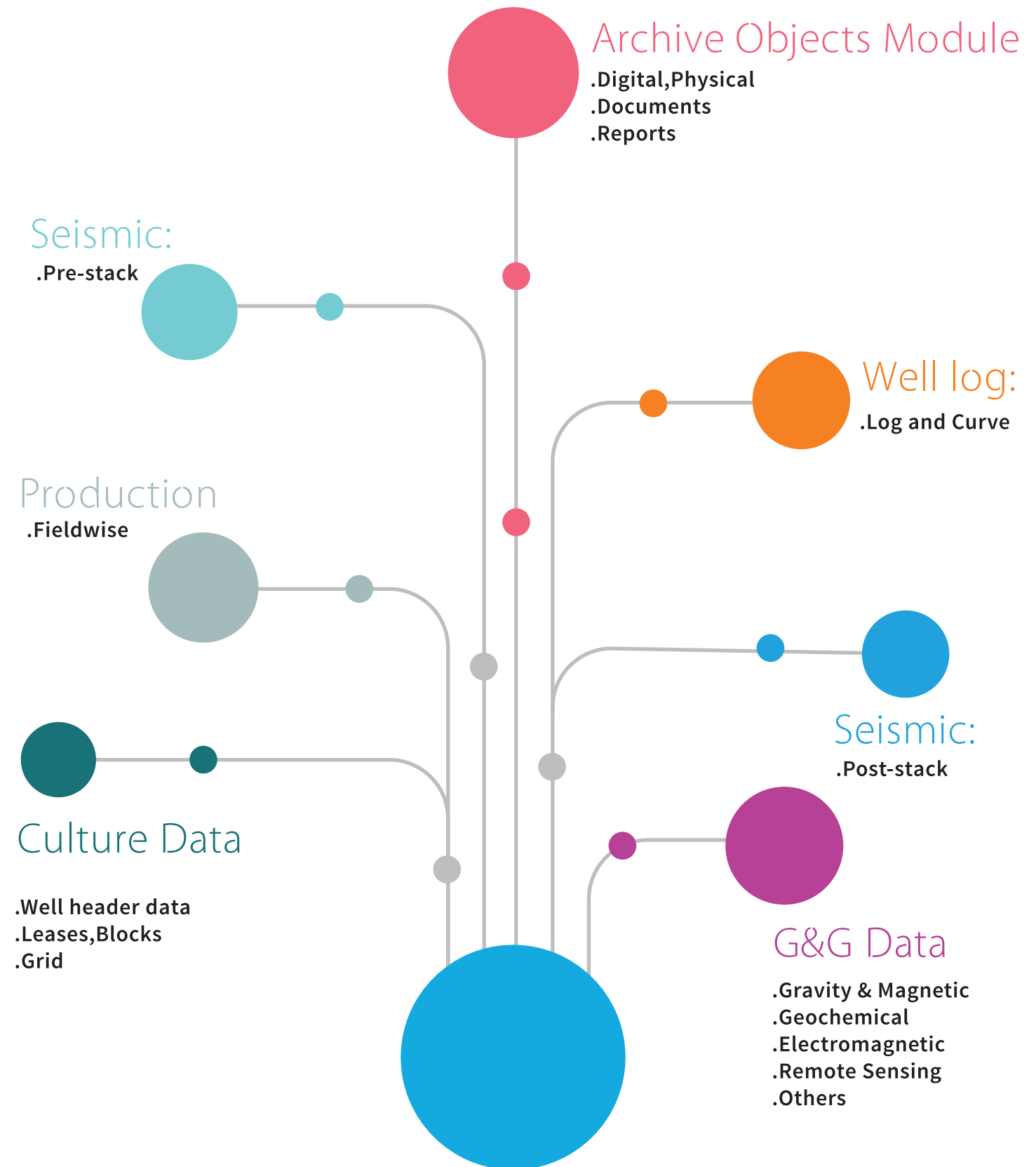
Facilities AT NDR

- State of the art Primary Data Centre (PDC) equipped with latest technical features of data storage capacity of 156TB of hard disk to store processed data & 720TB robotic tape library with 240 slots to store LTO 6 cartridges
- 42 TB of Processed Data residing on hard disk in on line mode and 494 TB of raw data on LTO 6 media in near line/offline mode
- Robotic tape to generate an entire infrastructure data back-up for Disaster Recovery/ Data Restoration/near line Data Management
- Secondary Data Centre (SDC) facility with 60TB for Disaster Recovery and Business Continuity
- Virtual servers deployed in High Availability (HA) mode
- Real time data replication between PDC & SDC
- Fully equipped Data Visualization Rooms have been set up for viewing of G&G data , soon to be upgraded with G&G interpretation application
- Data view rooms to view image files and decision space geoscience for 3D data in map view, line view, cube view, section view, time slice and random 2D view
- Multiple well logs correlations display
- Dedicated data storage rooms for media, reports and physical data management with latest security features
- Skill development centre facility for specialized training of operating staff and E&P operators on data sharing through web portal and functionalities of NDR
- NDR data centre infrastructure is designed in redundancy mode

NDR'S Data security features

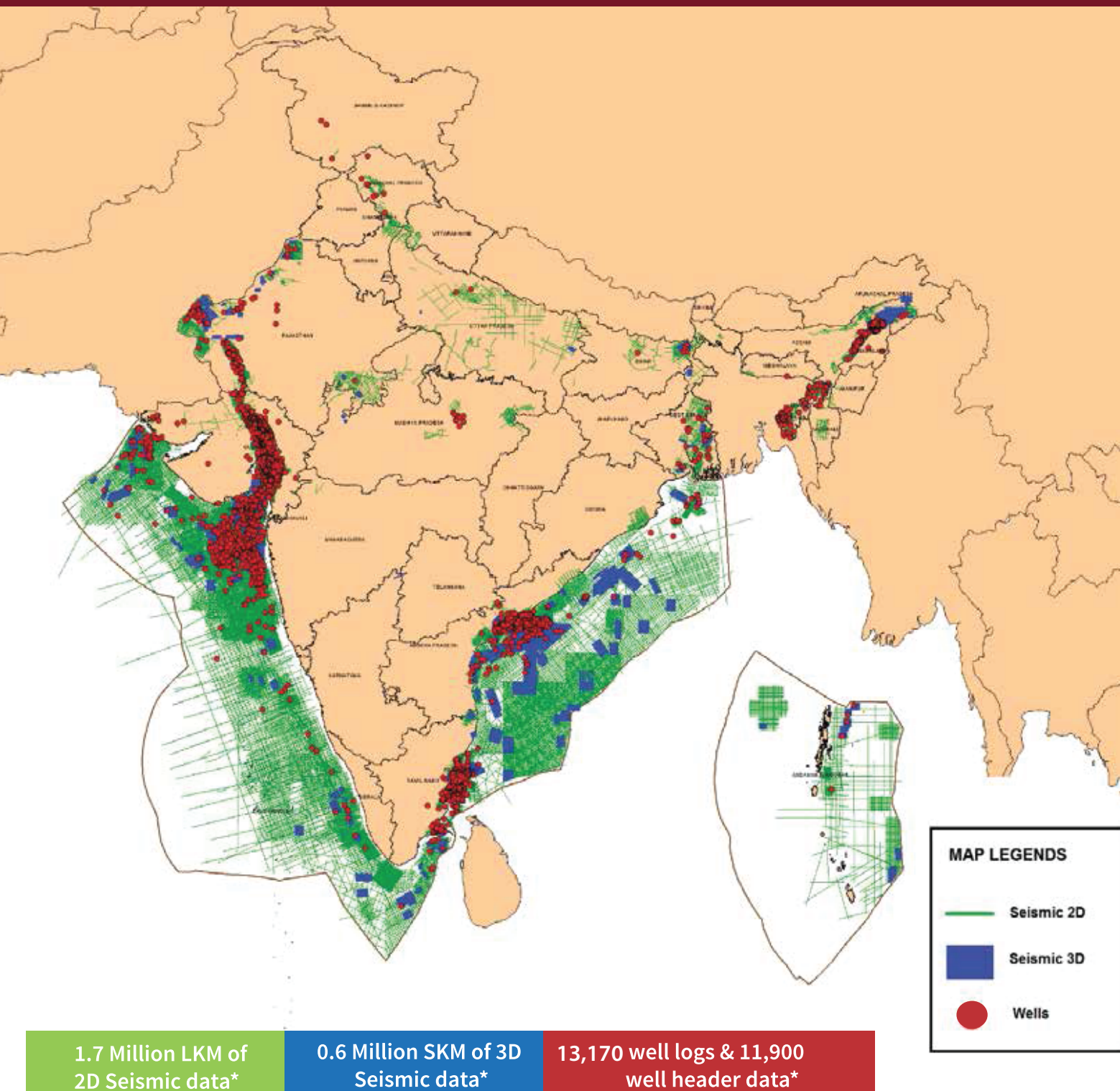
- NDR is in process of implementing **ISMS for information security with a goal to minimize risk and ensure business continuity**
- NDR is being built in compliance with **ISO 27001:2013** standard
- Access is highly secured with **multiple biometric entry and exit points, with separate sections** for IT, data loading, 24/7 maintenance team, DGH representatives
- Network access is secured by **two layers of firewall**
- **External devices are denied network access**
- **Vulnerability Assessment and Penetration Testing** has been conducted for NDR network security

Data sources of NDR

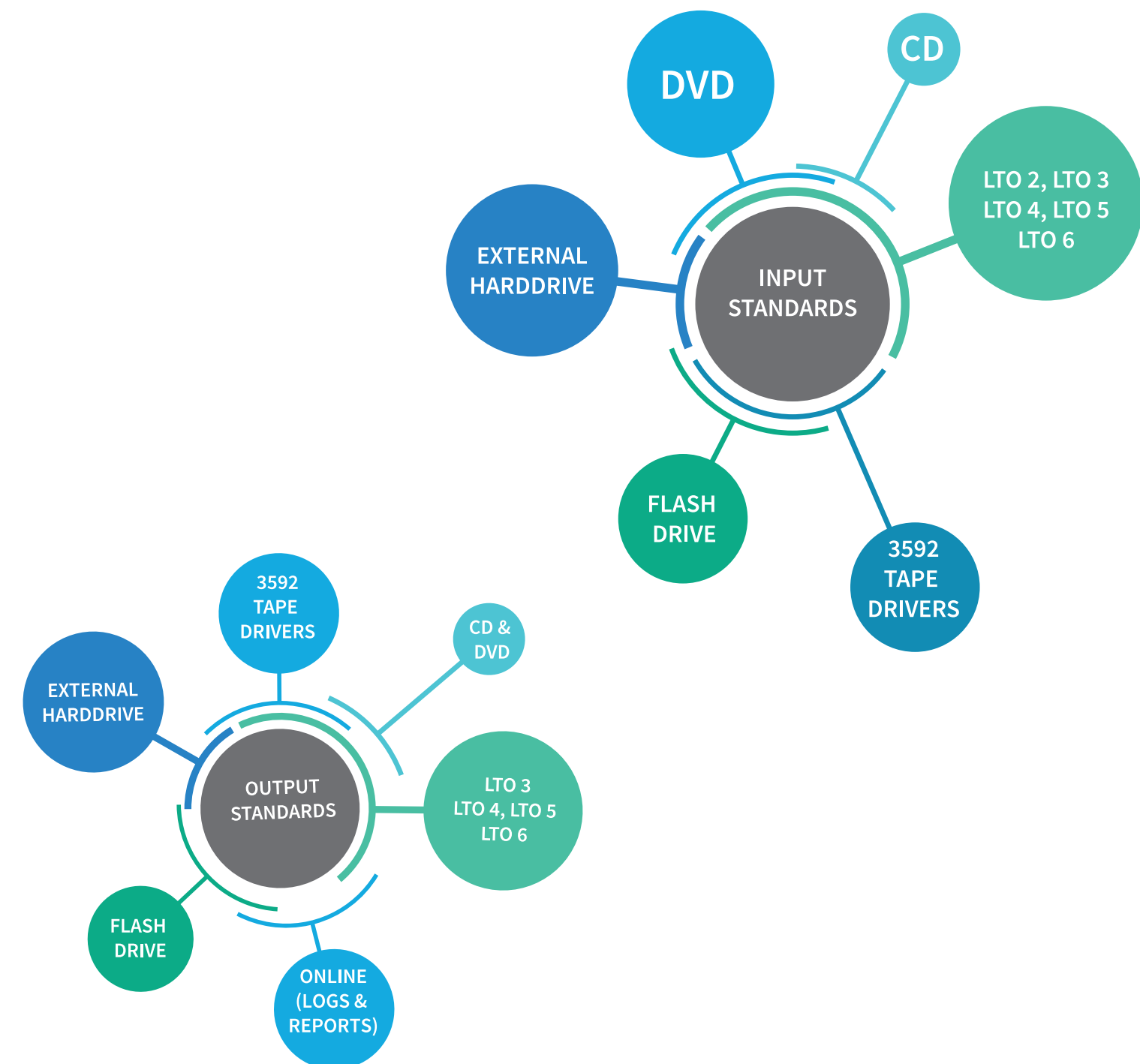


Data Available Through NDR

Input and Output Media Standards



*As on 31st July 2017



Beneficiaries

- E&P Operators
- Universities
- Research institutes
- Govt. Agencies(NGRI, SOI, GSI, etc.)
- Parties entitled by DGH

Data Sharing, Accessibility & Dissemination through NDR

Given that augmentation of NDR is a continuous process, data is acquired on a perpetual basis from the Operators

Data can be accessed through web portal on 10'x10' sector as well as 1'x1' grid, in desired area

Users can view the data available in NDR after registering on NDR web portal

Users can now preview processed seismic image file of 2D/3D data, log data, reports and raw seismic data

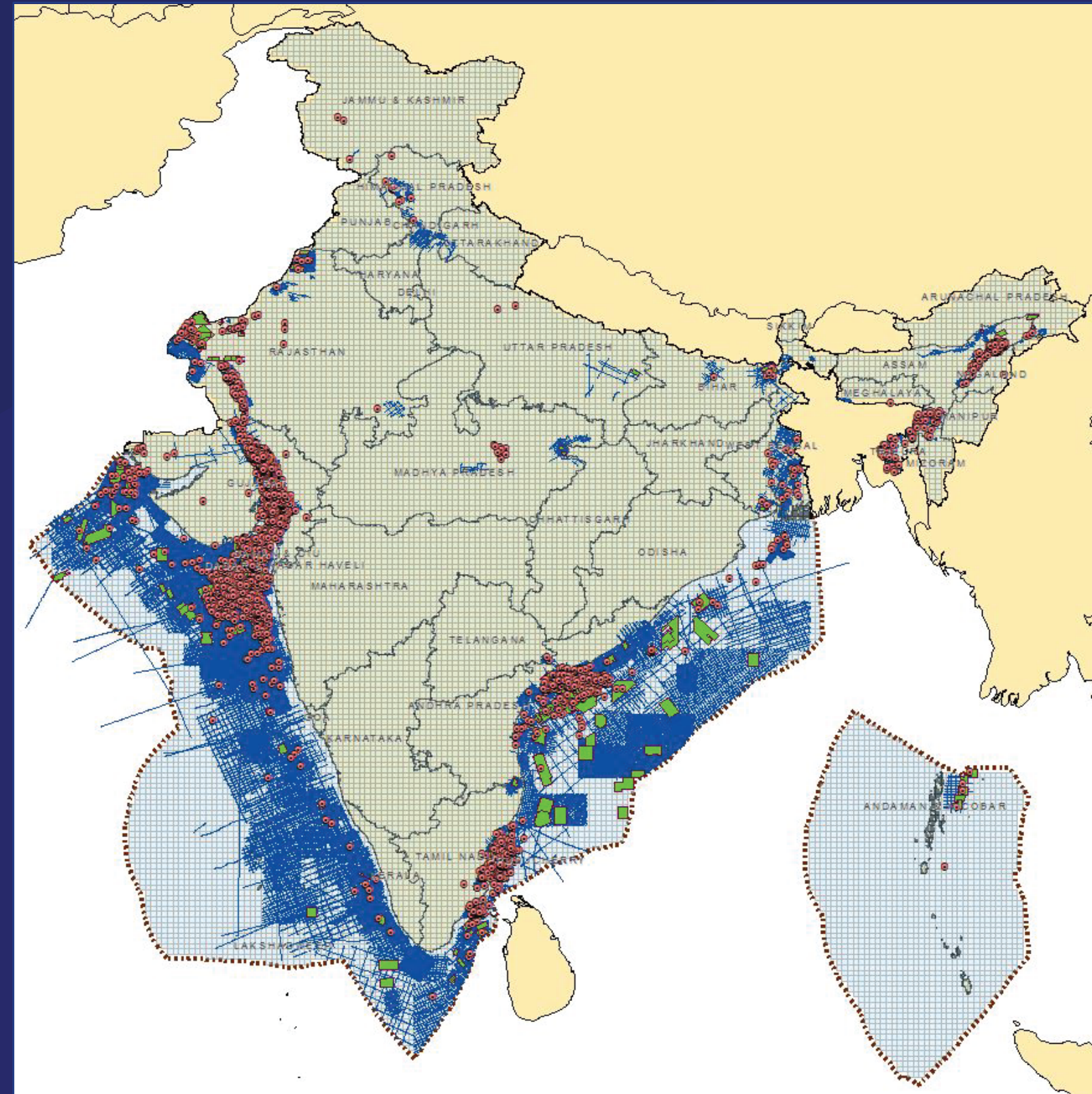
End users can come onboard NDR to view the data in data rooms

The geological prospectively can be accessed through scanning of data

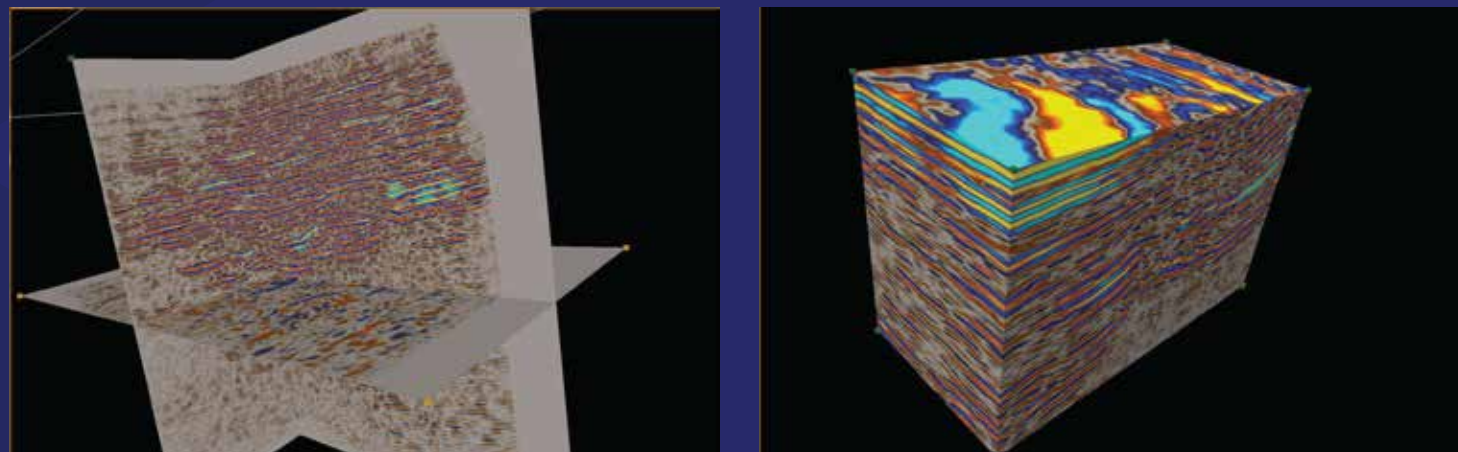
Field data/ raw data can be bought from NDR by user or investor for value addition including processing

NDR/ DGH shall have the right to disclose any or all data including proprietary data, to any person or legal entity as per timelines

In case of conflict on the question as to whether any particular data is of proprietary nature, DGH would be the sole authority to take the final decision



10 minutes by 10 minutes grid



Illustrative view of Geological Prospectivity of Data



Data access policy of NDR

- Users can visualize the seismic data remotely in the form of image files, preview of well logs, listing of log files & availability of other reports on interactive GIS map on 24*7*365 basis
- Data can be accessed through web portal on 10'x10' sector as well as 1'x1' grid in desired area
- Users are allowed to see data in physical data rooms located at NDR in DGH. The request for loading & visualization of data is to be done via email. An investor on each occasion can view data for up to 30 sectors for offshore areas & 20 sectors for onshore areas
- For visualizing data for more than 30/20 sectors or for other area/sector investor has to book another appointment on the web portal of NDR
- Maximum 4 persons per company per workstation can visit data rooms & users will be allowed to save interpretation project up to their booking date
- Maximum of 5 snapshots per project is allowed to be taken
- Payment shall be accepted through a secured gateway through Credit/Debit Card, Net Banking/Bank transfer, Bank Draft and Cheque on realization
- Small data especially well data (Log data, Well header), Seismic 2D processed stack data & Reports will be delivered instantly online after receiving payment
- Seismic Raw data and Pre & Post stack 2D/3D seismic (including Angle stack, raw/processed gathers) will be supplied offline in the preferred media choice of the user



Data sharing with Institutions

To promote R&D, research institutes will be allowed to visualize all available data in physical data rooms for 3 days free of cost

Visualization beyond 3 days will be charged as per the standard data room charges applicable to E&P operators

All the E&P data of one sector (area of one 10'x10' grid) maybe shared with the institutes free of cost

E&P Data for more than one sector may be shared with the Institutions on discounted cost of 50% of existing rates

Signing of a confidentiality agreement is required

The institute must share the study reports to DGH free of cost within 3 months of completion of project

Data sharing with University and Academia

Confidentiality Agreement signed by the Head of Department and duly stamped copy is required to be uploaded

For promoting research, limited data up to 50 sq. km. (multiple of 1'x1' grid) area will be provided free of cost

Meritorious students will be provided data free of cost.

If the data requested is of more than 50 Sq. Km (multiple of 1'x1' grid) then the standard data charges will be applicable for whole of the volume

The institute must share the study reports with DGH free of cost within three months of completion of project

NDR facility in DGH, Noida



Work station area



Training center



Data visualization
room



Conference center



Server room



Physical asset library