



AI-EMPOWERED GEOSCIENCE | NATIONAL PLATFORM

Indonesia Digital Geological Atlas

A national-scale digital geoscience initiative integrating geological knowledge, AI-driven interpretation, basin prospectivity and advanced petroleum-system modeling into one intelligent atlas.



What is Digital Geological Atlas?

A Complete Ecosystem for Indonesia's Geological Future

01



National Knowledge Repository

Preserve and manage national geological knowledge.

02



AI-Driven Operating System

Consolidate geological data into an accessible, AI-powered platform.

03



Geospatial & Analytics Platform

Provide an executive environment for rapid visualization, understanding and analysis.

04



4D Advanced Modeling

Improve exploration confidence through advanced geological modeling.

05



Basin Prospectivity

Prioritize exploration opportunities through integrated prospectivity assessment.

06



Accelerate Investment Decision

Through integrated intelligence insights, opportunity ranking and risk-based evaluation

Integrated Knowledge

AI-Powered Intelligence

Geospatial Excellence

Advanced Modeling

Strategic Impact

Sustainable Value

Why Do We Need Digital Atlas?

Indonesia needs a **unified, intelligent and integrated Digital Geological Atlas** to turn complex data into clear insights, reduce uncertainty and drive better energy investment decisions.



Fragmented Data

Subsurface, economic and risk information is distributed across multiple sources.



Manual Workflows

Basin screening and evaluation remain slow and resource-intensive.



Limited Integration

G&G analysis and commercial decisions are not sufficiently connected.



High Uncertainty

Limited visibility increases uncertainty in exploration investment decisions.

First AI Driven Digital Geological Atlas For Indonesia

From Raw Data to Investment - Ready Insights – All in One Intelligent Platform



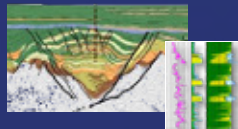
Basin Prospectivity

- Data acquisition & QC
- Regional geology
- Tectonics & stratigraphy

- Seismic Data
- Well & Log Data
- Geological Data
- Production Data
- Regional & Third-Party Data

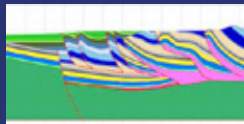
Integrated G&G and Petrophysical Interpretation

- Regional geology, stratigraphic framework & sedimentology
- Geophysical interpretation
- Petrophysical interpretation



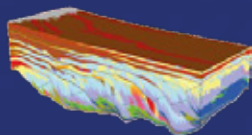
Structural Restoration

- Reconstruct basin & structural evolution
- Trap formation timing & preservation



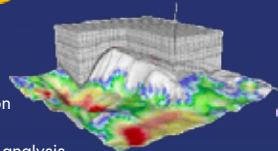
Forward Stratigraphic Modeling (FSM)

- Predict facies architecture through geological time
- Reservoir & source-rock distribution modeling



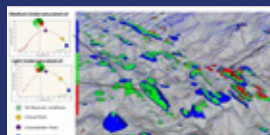
Petroleum System Modeling (PSM)

- Maturity generation & migration modeling
- Charge timing & accumulation analysis
- Risking of elements



Prospectivity Assessment

- CCRS mapping
- Risked volumetric prospect volumes
- Prospect ranking



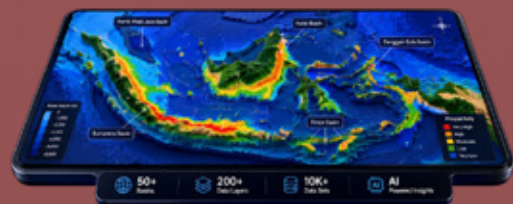
Intelligence Digital Platform

Agentic Data Fusion & Upstream Data Discovery

A national window into subsurface data. Its main component, the intelligent Lens, lets a user draw an area on the map and instantly see every block, field and well inside it.

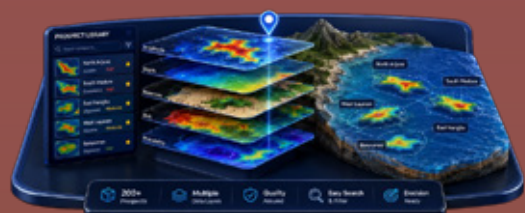
Basin Universe Basin Intelligence & Opportunity Screening

- Basin overview & Data coverage
- Integrated Data Explorer
- Geospatial map & Context
- Compare, Rank & Screen Opportunities
- AI-Powered Ask & Evidence Discovery



Prospect Library

- Prospect inventory & profile
- Ranking
- Ready-to-drill proposal
- Post-drill analysis
- Prospect AI insights



Differentiated Technical Strategy Across 10 Basins

Deep-dive prospectivity for 4 priority basins, complemented by minimum-viable frontier screening across 6 basins, *aligning technical depth with basin maturity, decision value and investment efficiency.*

4 Priority Basin

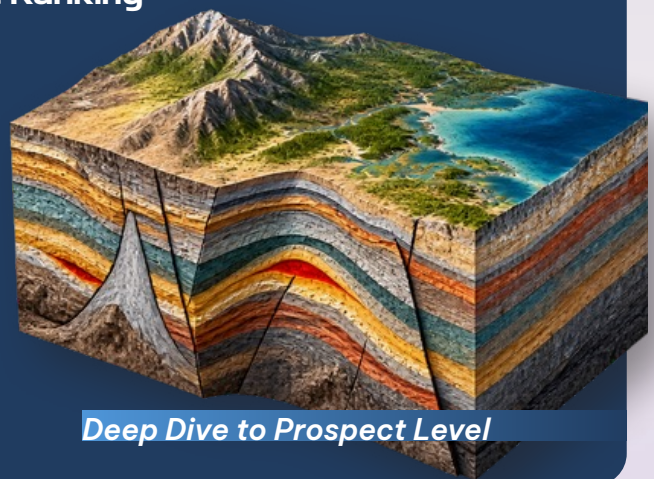
Integrated Prospectivity & Prospect Ranking

Core Studies

- Detailed geological, geophysical & petrophysical evaluation
- Structural Restoration & Forward Stratigraphic Modelling (FSM)
- 3D Petroleum System Modelling – thermal, charge & migration
- Prospect mapping, volumetrics, risking & ranking

Key Outcomes

- Matured prospects
- Risked volumes
- Prospect ranking
- Priority exploration opportunities



Deep Dive to Prospect Level

6 Frontier Basins

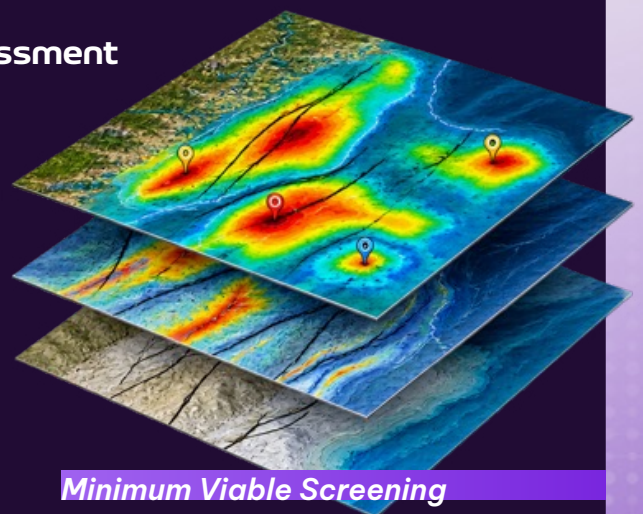
Basin Screening & Play Fairway Assessment

Core Studies

- Regional geological framework & 2D seismic interpretation
- Targeted 2D structural restoration
- Targeted 2D Petroleum System Modelling (*maturity, charge & timing*)
- *Play fairway assessment & lead screening*

Key Outcomes

- Petroleum system potential
- Play fairway maps
- Potential leads / areas of interest
- Key risks, uncertainties & data gaps



Minimum Viable Screening

Journey To Agentic AI

Fragmented upstream data becomes a structured intelligence foundation,
accelerating the path from data repository to Agentic Enterprise.

Indonesia Digital Geological Atlas

Data Foundation

Data Repository

Data storage

Potential blocker:
siloed data



Data Foundation

Trusted data platform

Potential blocker:
vendor lock-in



Data Foundation

Connected Data Ecosystem

Integrated information

Potential blocker:
data without knowledge
or context



Intelligence Data Layer

Data + interpretation + knowledge

4 Priority Basin

Integrated Prospectivity &
Prospect Ranking

Deep Dive to Prospect Level

6 Frontier Basins

Basin Screening &
Play Fairway Assessment

Minimum Viable Screening

Potential blocker:
inefficient analytics from database issues

AI-Assisted Analytics

Human + AI collaboration



Future Digital Geological Atlas

Agentic Enterprise

AI Agents

Task-oriented
autonomous assistance



Agentic Enterprise

Autonomous decision
intelligence



Data Foundation

Trusted, integrated upstream
data backbone

Intelligence Layer

Context and actionable
insights

Agentic Enterprise

AI agents supporting
autonomous decisions

Business Impact

Faster decisions, lower risk
and higher returns

Humanizing Digital Experience

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