EARTH SCIENCE ANALYTICS

From fragmented data to **connected intelligence**

Background

Mature basins hold decades of legacy subsurface data, including well, seismic, image, and interpretation data. Increasingly, opportunities such as missed pay are overlooked not because data is lacking, but because the evidence is rarely evaluated together.

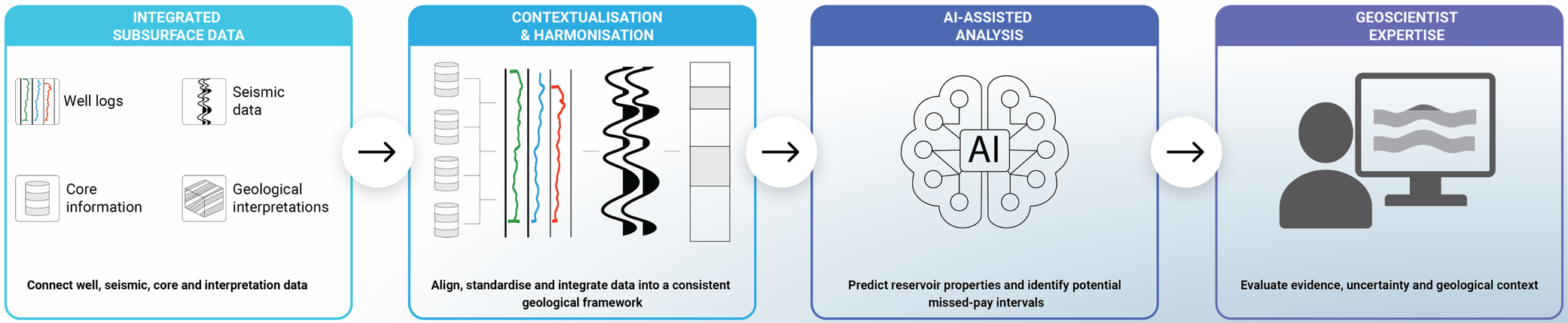
In mature basins, existing infrastructure can reduce development cost and get new finds into production faster.

Problem

- **Fragmented data:**
  Spread across systems, disciplines, and assets, so decisions rest on incomplete or inconsistent evidence.
- **Siloed teams:**
  Different workflows can lead to different conclusions from the same data.
- **Time lost to data work:**
  Geoscientists spend more time finding, cleaning, and integrating data than interpreting it.
- **Lost knowledge:**
  Interpretations and learnings get buried or leave with people, so projects start from scratch.

Solution

An integrated, **AI-assisted workflow**



1. Integrate
Bring well, seismic, image, and interpretation data together, including legacy data.

2. Harmonize
Align and standardize it into one consistent geological framework.

3. Analyze with AI
Predict reservoir properties and identify potential missed-pay intervals.

4. Apply expertise
Geoscientists judge the evidence, uncertainty, and geological context.

How **EarthNET** puts the workflow into practice

Connects to all major data storage providers. Data remains in customer storage, with no duplication.

Harmonizes well, seismic, geological, production, and unstructured data in one trusted environment for discovery, analytics, and AI.

Data, interpretations, predictions, and expert insights stay connected. Every project adds to a growing foundation of subsurface intelligence that can be reused across assets, teams, and future projects.

1/ Data source

Customer Data Source

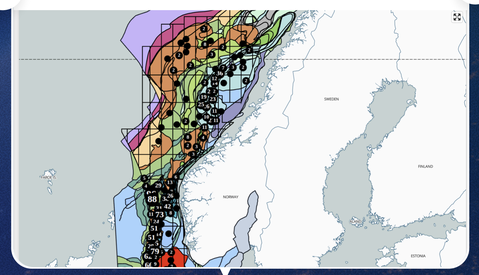
Data remains in customer storage (no duplication)

Azure · OSDU · DELFI · CEOAI · aws · Google Cloud

2/ Data Indexing

EarthNET Strata

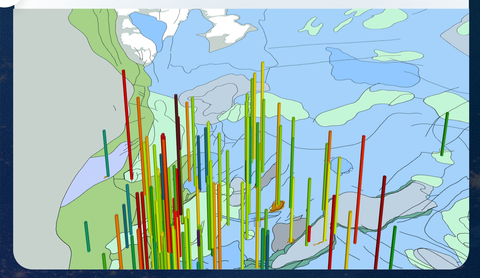
Enables integration across data types and workflows



3/ Data Analysis Powered by AI

Compound Learning

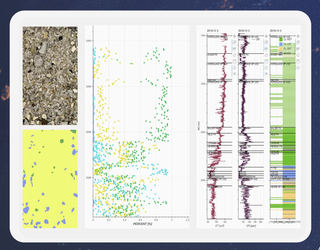
Every project improves the next



EarthNET modules

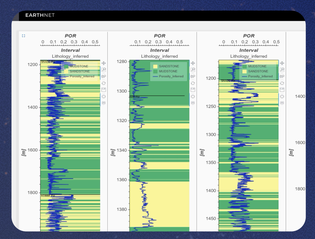
AI Images

Rapid classification and recognition of minerals and lithology from cores, cuttings, thin sections, and other geological imagery. Delivers faster, more consistent geological insights.



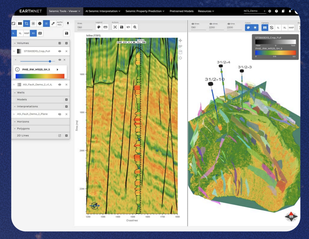
AI Wells

Reconstructs missing logs, generates synthetic logs, and predicts reservoir properties. Helps fill data gaps and improve confidence in subsurface decisions.



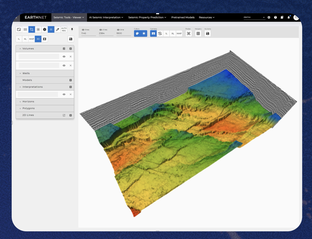
AI Seismic Properties

Generates reservoir and rock property volumes from seismic data using AI. Improves reservoir characterization and reduces uncertainty in prospect evaluation.



AI Seismic Interpretation

Automates fault and horizon picking to accelerate seismic interpretation.
Reduces manual effort and speeds up decision-making.



Each module applies AI within its own area of expertise: AI Images, AI Wells, AI Seismic Properties, and AI Seismic Interpretation.

Outcome

- **Better decisions:** Fragmented data becomes trusted intelligence across exploration, development, and energy transition projects
- **Faster work:** Analyze more data in less time and spend more time acting on insights
- **Alignment:** One connected environment aligns disciplines and reduces variability in analysis
- **Knowledge that grows:** Past work is preserved and reused instead of starting from scratch

EARTH SCIENCE ANALYTICS Leading Brand of IMDEX™

Earth Science Analytics AS, a leading brand of **IMDEX**, delivers digital subsurface solutions designed to unlock greater value from their geological and geophysical data. ESA's EarthNET platform enables enterprise-scale data management, data harmonization, visualization, interpretation workflows, and integration with advanced analytics and AI technologies across the energy sector. As part of IMDEX, ESA combines its energy-focused expertise with the scale, innovation, and global reach of a leading resources technology company, helping customers turn subsurface data into actionable insights and more confident decisions.