



ELASTICDOCS™



ElasticDocs and
Data Atelier for
Environmental, Social and
Corporate Governance (ESG)

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Have you ever wondered what happens to the data your company accumulates every single day. ?

In Environmental, Social and Corporate Governance (ESG), risks and opportunities related to sustainability are recognized, evaluated, and managed under a holistic framework with respect to stakeholders relating to environmental, social and governance aspects. Despite the differing practices and standards in each of these domains, together they show how determined an organization is in creating an elevated enterprise value.

Within the duration of organizations' operations with integrated ESG framework reaching years of daily operations, they produce large amounts of data. From engineering reports for energy management, sustainability plans, environmental quality reports, ESG analyses, investment reports, safety policies, and so on.

80% of this data is usually *unstructured, unprocessed, and unreadable.*

Analyzing this data can be the key to optimizing your business operations by reducing unnecessary costs. It can lead to eliminating risks by finding patterns in analytical reports and making predictive investment and capital allocation decisions. It can help create best practices for your company with fast, data-driven decision-making.



Wouldn't it be practical

if your stakeholders, engineers, scientists, consultants and project managers were to discover and analyze this **unstructured data** right away instead of spending more of their time searching through this data? **Data Atelier** and **ElasticDocs** are solutions that can be used to lead new processes and workflow pipelines with reduced uncertainty.



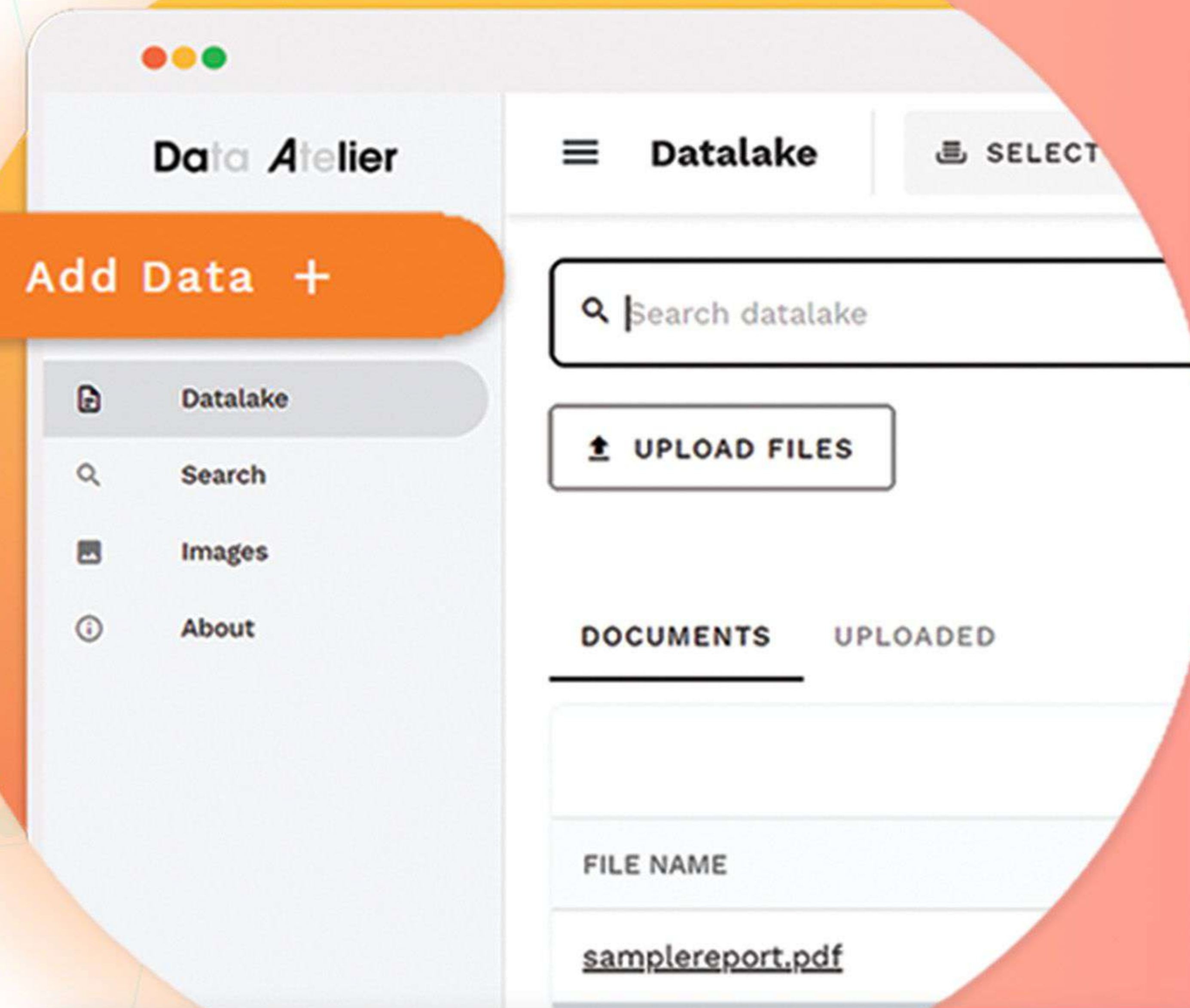
Meet
Data Atelier
a digital factory that is composed of

an orchestration of pipelines, data tracking, and monitoring service.

It provides an intelligent engine that runs the internal processes and machine learning algorithms that come with production. When optimized, it drives the cost of production down by ensuring economy of scale. In addition, it is fully customizable based on your company's data management needs.

Here are the **innovative things** it can do for you:

- Facilitate data tracking, policy and standards compliance, as well as SOP's implementation.
- Future-proof your data.
- Enhance the capability of engineers, analysts and data scientists to create workflows and models suitable for operational use with a similar targets.
- Centralize and normalize the schema and structure of the different processes and data types.
- Allow engineers, scientists and decision-makers to trigger an "on-demand" type of service for processing ingested data and control their own data.
- Enable internal engineers and clients to visualize and monitor the data that has been ingested in Data Atelier.
- Foster collaboration with different digital teams within your company.
- Give a fresh new perspective to old data which can lead to better research results.
- Take AI from experimentation to at-scale deployment in a low-code environment.
- Integrate unstructured data information with your current enterprise Oracle, SAP, and other 3rd Party web databases.



With **Data Atelier**, you have the power of **machine learning** and **artificial intelligence** in your hands. You customize your data the way you want it, how you want it, when you want it.

Meet ELASTICDOCS™

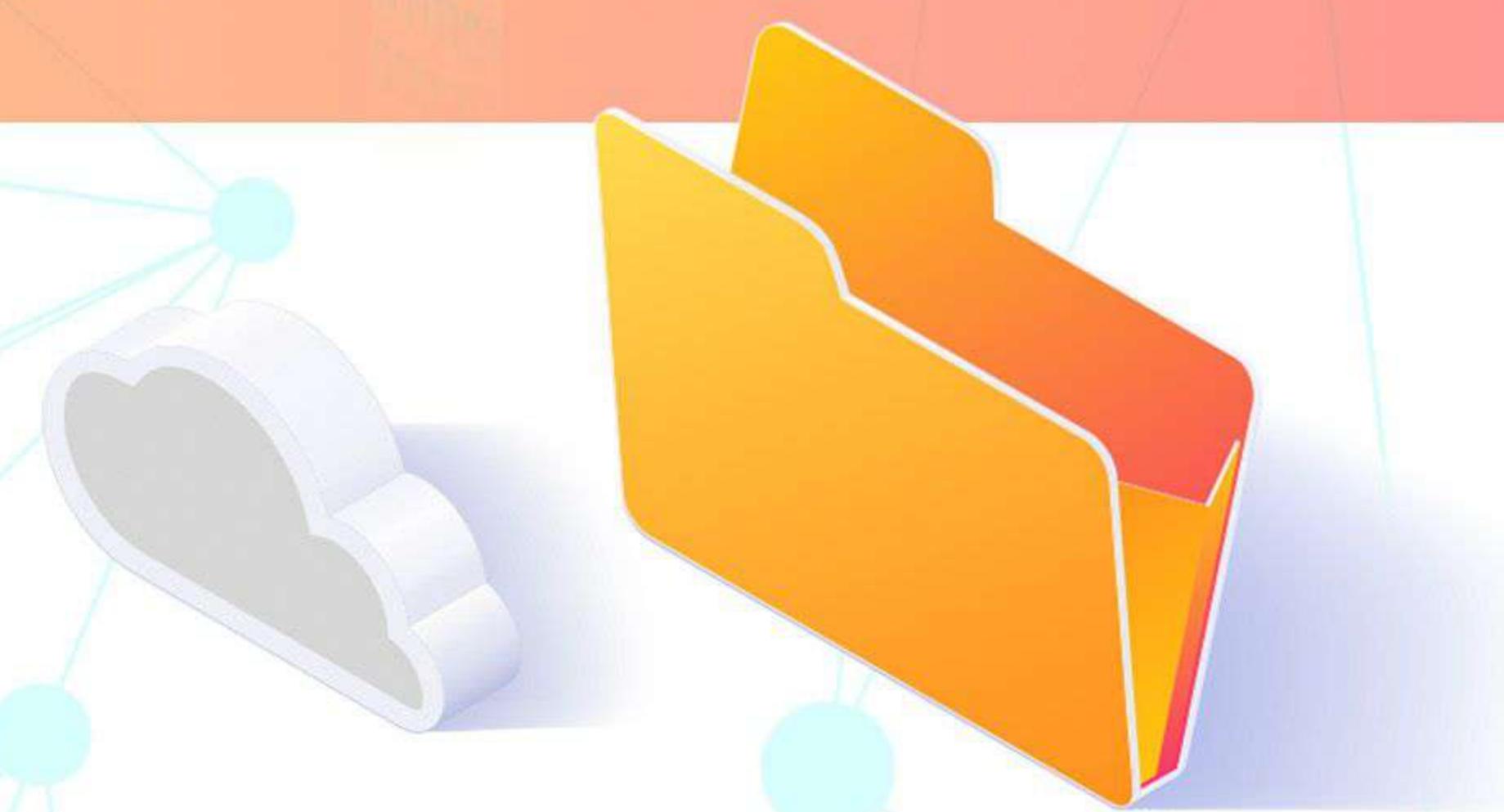
a *cloud-enabled* web solution

that makes *unstructured* earth and energy data instantly accessible.

The best solution to this data problem is ElasticDocs™, our *Intuitive Knowledge Container*. It can quickly and easily transform *unstructured data to reader-friendly structured data*. What's more, it's instantly available for **search, retrieval, and information extraction**, faster than any technology in the industry today. Through its innovative artificial intelligence platform and **search-and-cluster** technology, it enables professionals to **browse through** thousands of your proprietary corporate reports and publications **in minutes**.

Here are just a few of its *state-of-the-art* features:

- Processing time is up to **40-times faster** than any manual workflow, reducing data mining project turnaround by up to 75%. This means a month's worth of work is reduced to just a week.
- Proven track record for **geoscience and engineering data** and pre-trained on large data repositories worldwide.
- Built with an interactive, **user-friendly interface** that brings the value of **machine learning** to the energy and engineering industry as a functional and web-based software. It can be accessed by multiple users, anytime and anywhere.
- Produces outputs of **structured data** such as **.csv tables, heat maps, and knowledge graphs** that provide valuable knowledge and quantitative insights that meet your business needs.
- Your data and our technology are constantly updated and kept **evergreen**.
- Equipped with **GIS layers** to geolocate information and provide understanding on the availability of information within a particular area.



What can *ElasticDocs & Data Atelier* do for Environmental, Social and Corporate Governance (ESG)

ELASTICDOCS™

Search and retrieval of documents regardless of format (Word, Excel, PDF, Powerpoint, etc.) are also made more convenient through instant cognitive search and ranking of results, retrieval and full traceability to original document location that can be exported as csv files.

Automated tagging of energy efficient programs, safety policies and governance standards. Extraction of metadata in resources management or supply chain analyses.

Investments/programs can be used as nodes in a knowledge graph where documents related to certain assets will act as edges to other nodes. Critical programs, analyses and processes that affect each other will be shown from such analysis and can be used in mandates, scheduling, programs, plans etc.

With the ML-based processing methods using **Natural Language Processing (NLP)**, **Image Classification using DCNN** coupled with complex visualization tools, we can do:

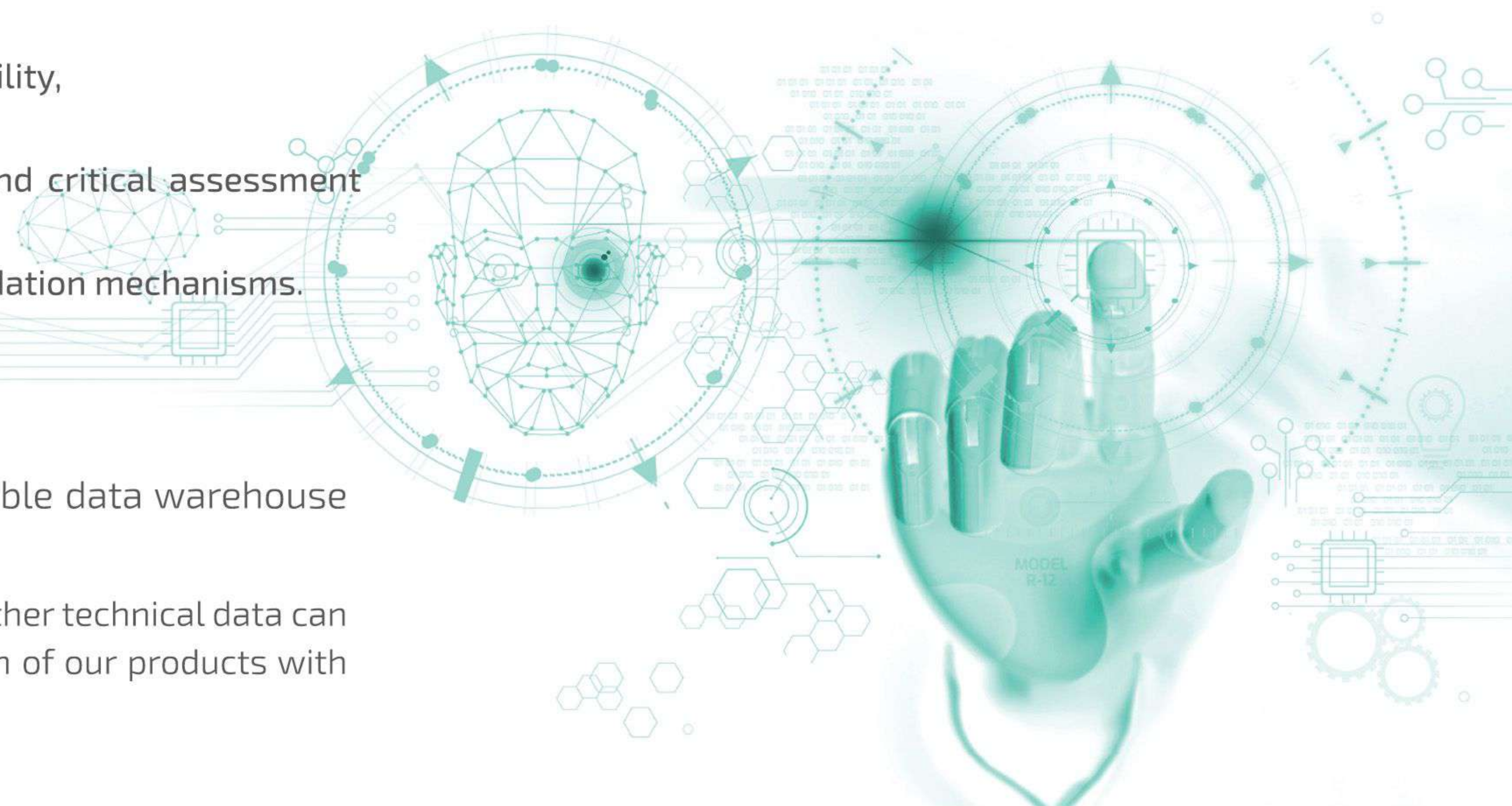
- Holistic reviews of relevant technical, governance and human welfare data and documents such as design dossiers, datasheets, quality analyses of programs and other relevant documents,
- Sustainable Data Wrangling to populate asset and investment registry,
- Architectural, landscape and engineering drawings or investment management and programs tagging and metadata extraction,
- Anomaly detection from a large number of reports for fabrication with tracking ability,
- Clustering and predictive analyses for assets and programs,
- Holistically assessment of reports prior to performing solution deployments and critical assessment reviews, prepare technical worklists and quality inspection plans,
- Mass review analyses of impacts on sustainability programs with common degradation mechanisms.



Data Atelier

Data management is made easier. Single unified infinitely scalable data warehouse removes data silos within the company.

After the information has been extracted, data such as analytical spreadsheets and other technical data can be compiled into formats, templates, or registries for your needs. Flexible integration of our products with your current data pipeline or desired database can be done using APIs.



Mining in a World of Finite Earth Resources

Stakeholders in the **mining industry** have ambitious plans to achieve ESG targets, which is a big challenge in a world of finite mineral resources but infinite energy demand. ESG targets can be achieved by:

- Aligning capital allocation such as building their investor's portfolio and positioning their assets for the long term tends to focus on energy-management-related projects that have clear economic returns and minimum environmental impact.
- Reshaping traditional mining value chains by managing ESG concerns not only among suppliers and customers, that demand earth minerals, but also the community where mining operations are hosted
- Embedding an operating model that facilitates visibility, accountability, and collaboration between departments along a clear governance structure to respond to ESG opportunities, challenges, and risks
- Holistic ecosystem cost-benefit assessment throughout the full mining life cycle from exploration, production to rehabilitation of earth, air and water systems impacted by mining operations.

Moreover, organizations are jumpstarting their **ESG journeys** through:

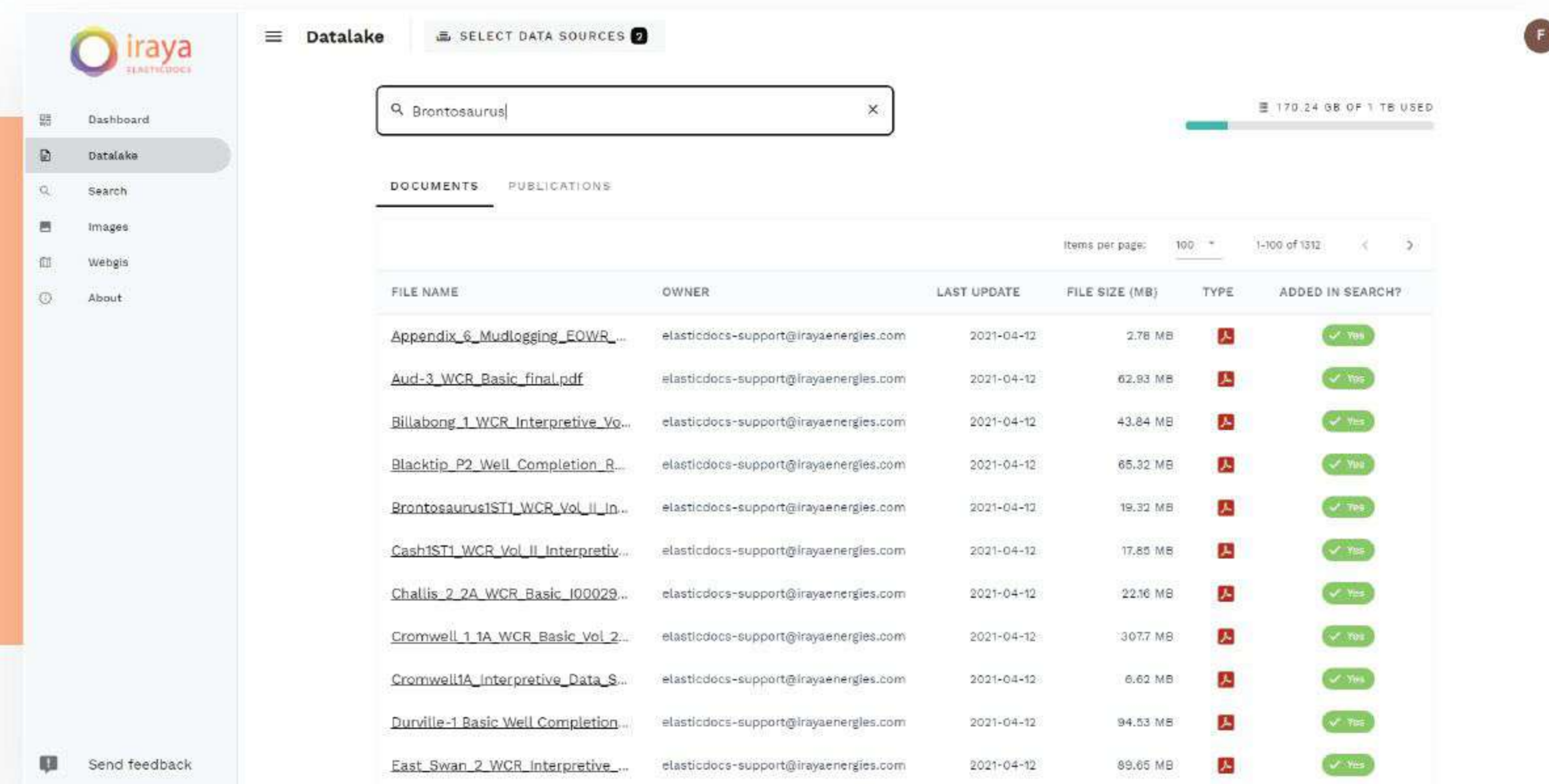
- aligning incentive structures with broader ESG goals such as energy efficiency,
- commitment to ESG decisions that can add value,
- repositioning their portfolio with value-creating opportunities that respect planetary boundaries,
- testing ESG structures and processes regularly as a part of long-term scenario planning,
- identifying loops such as ways to re-integrate and recycle or upcycle byproducts back into processes or products,
- and communicating ESG expectations at every stage of the value chain by promoting agility and transparency.



While the **mining industry** is very much in transition from intent to execution, it is widely recognized that embedding ESG into all levels and parts of their organizations would really help them achieve their targets, balancing mineral production objectives, with focused earth stewardship.

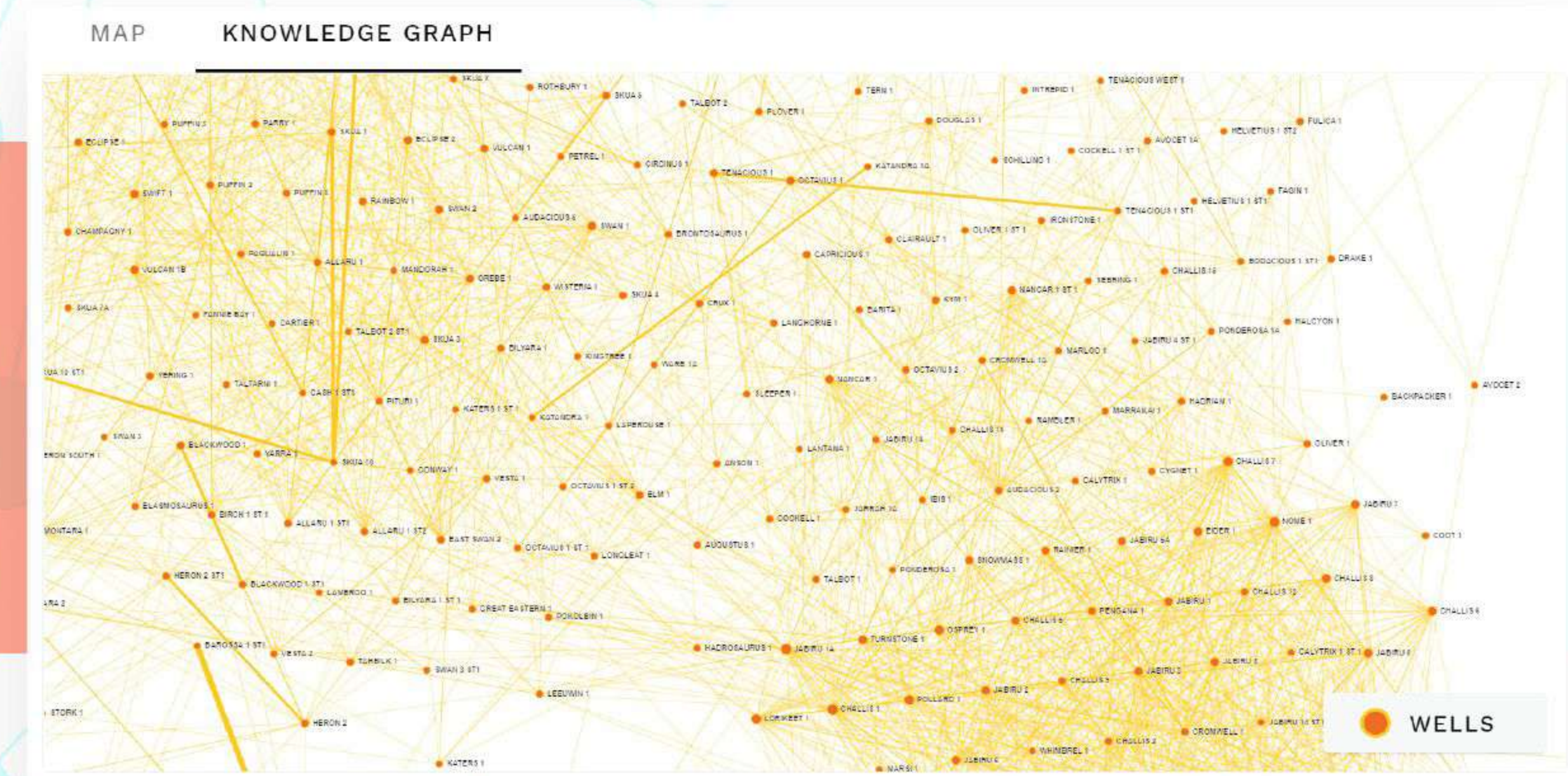
The success of executing the embedment of ESG into all aspects of mining begins with **well-organized and accessible data**. Iraya's digital solutions **Data Atelier** and **ElasticDocs™** can increase information accessibility to **95%**, optimizing this execution's workflows and allowing mining operators to lead new processes and workflow pipelines with reduced uncertainty.

What is the Value of Processing Unstructured Data



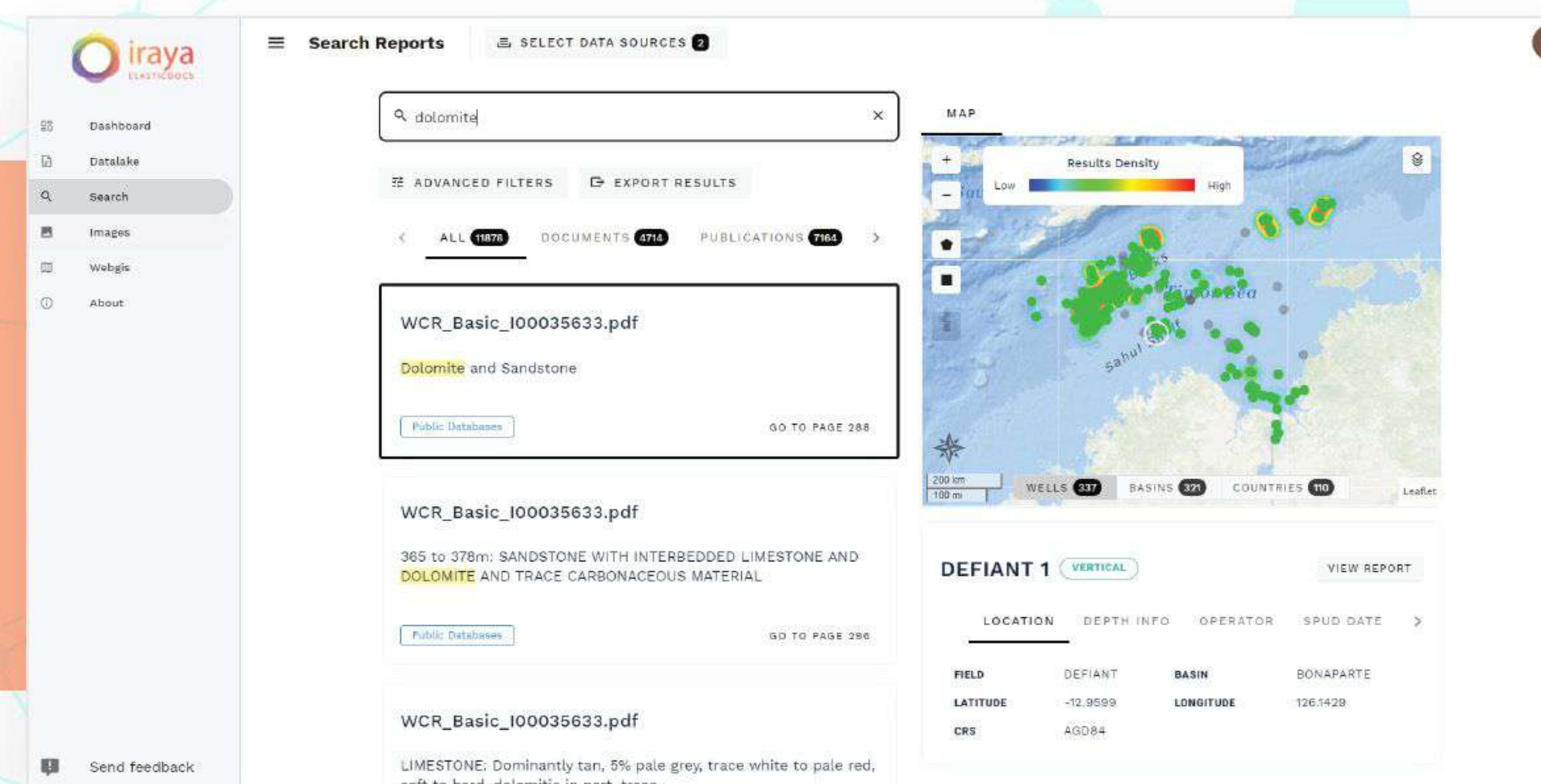
Data Management

Removes data silos
Infinitely scalable data lake solution



Knowledge Graph

Correlates related equipment/assets from one document to the other, establishes an information highway within the document corpus



Search and Retrieval

Text: Instant cognitive search and ranking of results, retrieval, and full traceability to original document location with geolocation information, search results with metadata can be exported as .csv files

Images: Auto classification, anomaly recognition, clustering and search of text within images
Drawings: metadata extraction, tagging, and search of text within engineering drawings (Structural, pipeline, RBI, etc.)

Iraya's Solutions for better data management

ElasticDocs™ as SaaS Solution

Through an SaaS (Software-as-a-Service) enterprise solution, the ingestion cost is based on the **volume of data**, plus a one-time infrastructure setup. The **annual subscription** cost is based on the number of users. Our sales managers can help design the optimum deployment package for your organization based on your business needs.

Iraya ElasticDocs™ Analytics Service

Iraya's team consists of *expert domain geoscientists, data scientists, and industry-certified machine learning practitioners*. We are there to help ensure that your company or organization fully leverages on the *power of AI* by combining *human-in-the-loop* quality control and analytics process. We step in when:

- Algorithms are not understanding the original input
- The input data is not interpreted correctly
- When the data you are looking for is rare and not available
- When data needs to be converted to actionable insights.

Enabling New Digital Workflows

We will continue to help you with earth, energy, and environment analytics by recommending the suitable AI algorithms for your unstructured data at every step of your work processes. In addition, Iraya Energies will customize an innovative solution that fits your data analytic requirements and project objectives. And lastly, we can provide expert insights at a scale and pace that have never been seen before.

Industries Where We Work:

- Oil and Gas
- Carbon Sequestration and Storage
- Geothermal
- Geotechnical
- Windfarms
- Facilities and Engineering
- Mining

Technical Specifications

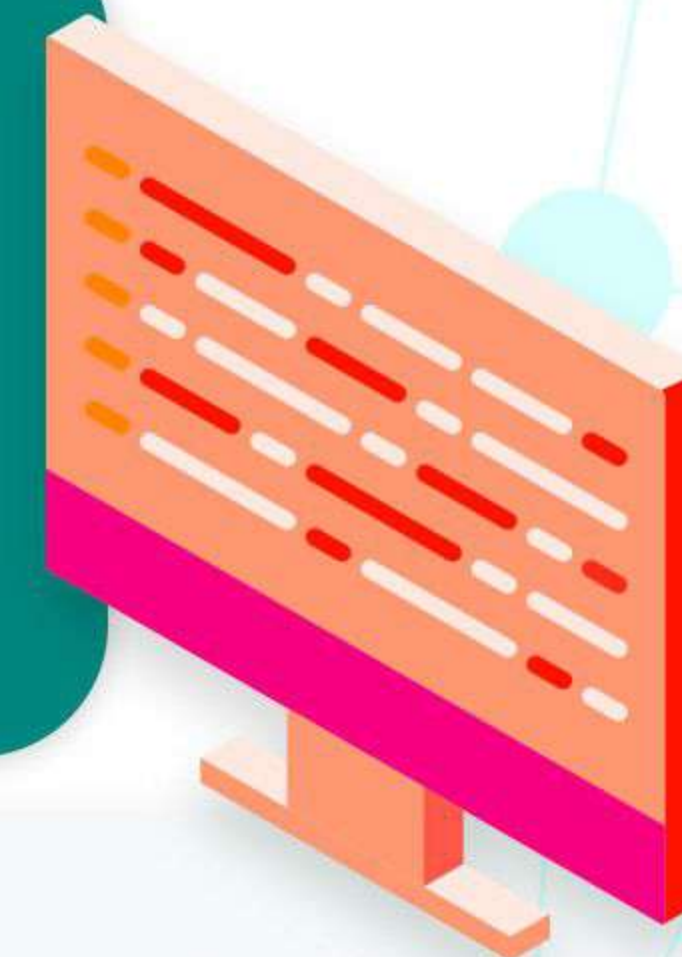
Input Data Format	Unstructured data including but not limited to Word, PDF, PPT, Excel, JPEG, etc
Input Data Quality	Variable input data quality may range from : vintage, typewritten, OCR-ready Handwritten (optional)
Technology	AI-enabled, end-to-end pipeline composed of optical character recognition {OCR}, natural language processing (NLP), image recognition, geolocation and elasticsearch
Advanced Search	Deep search within the full corpus
Advance Filters	Geospatial filter, metadata filter, document type filter
User Interface	Intuitive, user-friendly web browser
Language	Ability to translate over 70 languages
Infrastructure	Fully native cloud, enterprise-grade security, availability, compliance and manageability powered by Azure AWS and Google Cloud (optional).
Processing Speed	Full pipeline at 100,000 pages/ month
Tagging	Auto-image recognition using convolutional neural network
Metadata	Automated Metadata extraction through natural language processing Customer-provided metadata can be incorporated for easy search
GIS Layers	Enabled Customer-specific cultural data can be integrated upon request
Outputs	Structured data including but not limited to: search results in csv format, classification-ready images, instantaneous heatmaps, knowledge graph Table extractions in .csv format
Deployment and Support	Fully virtual from initialization to deployment On-site support (Optional)
Quality Control Principle	<i>Human-in-the-Loop</i>

Contact Us for more Information

It's time to read the earth better with us at Iraya. Find out how we can turn your *unstructured data* into insights and knowledge. To learn more about **ElasticDocs™** and what we do at Iraya,

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