iraya
read the earth better

ElasticDocs and **Data Atelier** for Assets Management

ELASTICDOCS and Data Atelier for
Assets Management

90% of data is unstructured
and only 50-65% of this data manually make usable.

In general, unstructured data is poorly utilized and only 5-10% of these are being optimized through reuse. This leads to an increase of 13% in non-productive time, with time being allotted to data retrieval. Data being non-accessible disrupts business in a negative manner.

Success of assets management starts with a well-organized data.
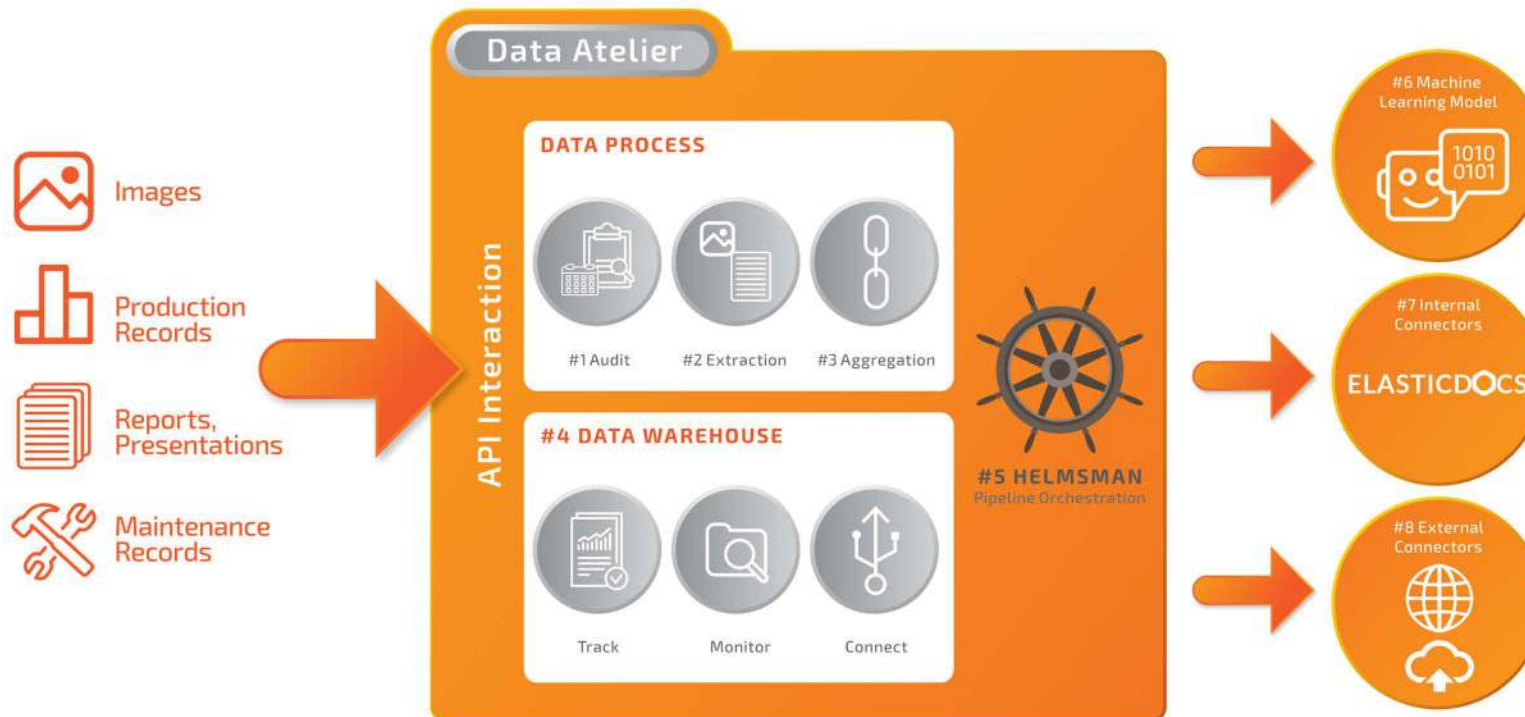
Data Atelier

Own the power of your data. Iraya's Data Atelier and ElasticDocs has all the digital capabilities to support facilities and engineering operations of an organization's biggest asset class - unstructured data.

The Data Atelier is an AI-enabled digital factory solution that can be connected to internal front-end applications, or Iraya's proprietary knowledge container, ElasticDocs. It leapfrogs the access of unstructured data in asset management for various purposes such as preventive maintenance, HSE, operations monitoring, inventory planning and others.

The Data Atelier will ease and provide the needed starting point and data to conduct root cause analysis, to define corrective and preventive actions, to determine non-productive time causes, to extract materials/assets metadata list, such as serial numbers, parts information, manufacturer information and others which are key to have an accurate equipment register, and essential inputs to other platforms or databases. All this information can be easily viewed and accessed via ElasticDocs.

ElasticDocs

Through its innovative search-and-cluster technology, ElasticDocs enables professionals to browse through thousands of files in seconds. Interrogate all your files in a single query.

Determine relationships among assets and facilities through a knowledge graph

Based on text extractions and identified document mentions, we can create a knowledge graph (Figure 1) of all the assets and reveal the relationships among all the assets and equipment components which will make troubleshooting and maintenance through identifying relevant documents efficient.

Have the power to search through all your documents and reports in a single query

Having all the text extracted and recognized from your documents enables a global text search to be possible. Literally, search through all your documents and images on a single query.

Search through all image annotations, captions, and labels and optimize the value of all your images

Having all the text within images extracted and recognized allows you to search through all the annotations, captions, and labels. This optimizes the value of all your images.
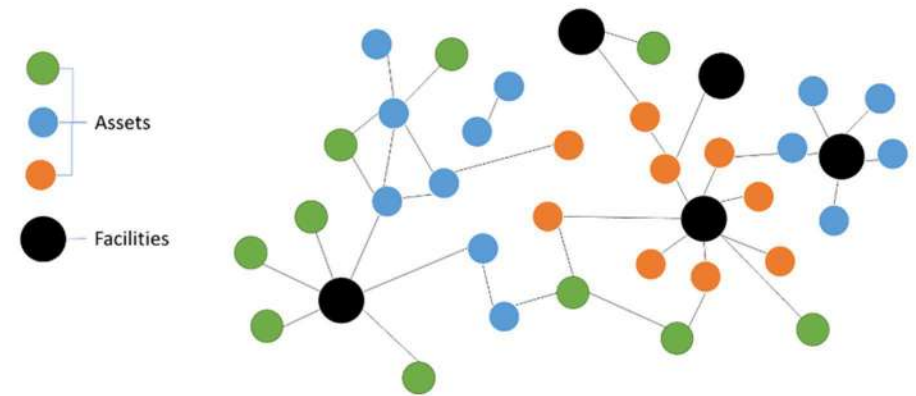

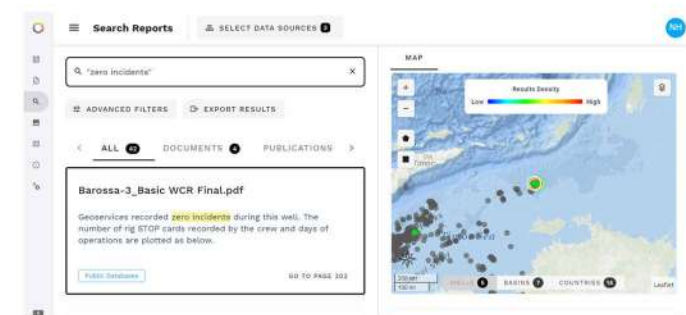**Figure 1:** *An example of an Assets and Facilities Knowledge*

Figure 2: *ElasticDocs Global search interface with the geolocated results frequency mapKnowledge Graph*
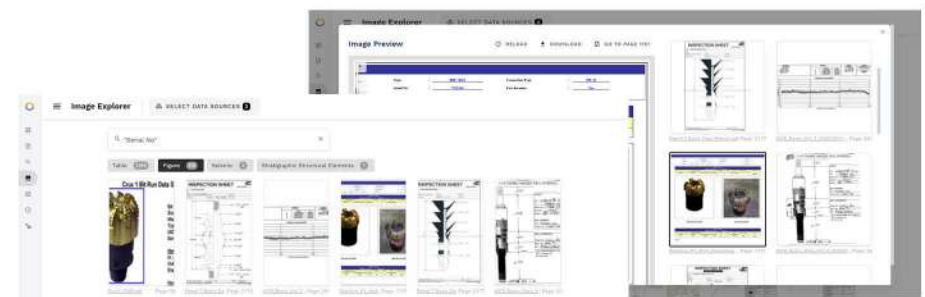

Figure 3: *ElasticDocs deep image search capturing labels, annotations, and captions*

Unlock the full potential of your data

Aside from assets and engineering management, data silos can affect many parts of an organization, such as budgeting, IT, human resources, HSE performance etc.

By breaking these silos with the Data Atelier and ElasticDocs, create a complete picture for not only the management but also for the engineering team to make more informed decisions and drive safety and operational excellence.

It supports and fosters communication and collaboration within and outside of the organization, with suppliers, original equipment manufacturers (OEMs), and more importantly your clients.

The Data Atelier increases the quality and credibility of the organizations' data by creating an accessible yet secured Knowledge Center of Excellence. Finally, it facilitates policies and HSE and SOPs compliance, making easier to do a quick reference to the standards.

Benefits of using Data Atelier and ELASTICDOCS

With the increase of information accessibility to 95%, optimizing your organizations' workflows with Data Atelier and ElasticDocs your organization will be able to lead new processes and workflow pipelines with reduced uncertainty.

- Unlock a level of insight and sustainability with the re-use of information and apply lessons learned to boost your operations' efficiency and maintenance reliability.

- Reduce non-conformance occurrence and equipment failure not only with regards to quality but also from an operations perspective.

- Ultimately, by having access to all knowledge reported in the logbooks, be able to exploit staff experience (as extracted from files such daily reports, RCA, operations and maintenance presentation etc.) and standardized knowledge.

Iraya's Data Factory
and Knowledge Workflows

With extensive knowledge and experience on utilizing machine learning and artificial intelligence techniques, Iraya also offers custom services on knowledge extraction, data processing, cataloguing and visualization.
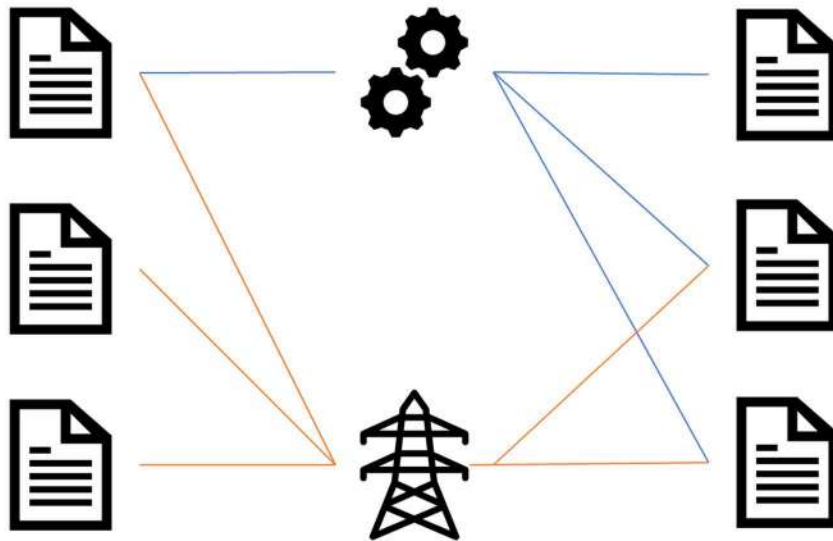
On document tagging, Iraya can tag the documents in relation to "Assets" or "Facilities" mentioned within the document. Mentions to specific assets and facilities name within each document and report will be identified and be used as a metadata for relationships.

For document classification or segmentation, Iraya can classify all documents/files into classes that relevant to Assets and Facilities Management such as maintenance reports, incident reports, materials datasheet, manufacturer information etc.

Iraya can include additional images classes and sub-classes relating to Assets Management to Our custom-made, multi-level classification using convolutional neural network. This existing model will be taught to learn drawing texture, the colors, and the feeling of 3D diagrams/engineering drawings or other relevant information.

With Iraya's proven experience on custom data extraction, our models can identify, and extract locations mentioned within each documents/reports in order to spatially place all the assets and facilities and other specific metadata the client may want to use for whatever purpose.