ALTILIA
intelligent automation

AUGMENT **People**

AUTOMATE **Processes**

ACCELERATE **Businesses**

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Building a Platform for Intelligent Document Processing: Opportunities and Challenges

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What is Intelligent Document Processing?

Intelligent Document Processing (IDP) is a suite of technologies that combines Artificial Intelligence (AI) and automation to convert unstructured and semi-structured documents into structured, usable information.

It combines technologies like OCR, Machine Learning, NLP, and RPA to read, understand, and extract information from documents of various formats.

IDP technologies enable automation of tasks such as document and text classification, segmentation, entity extraction, sentiment analysis, and question answering.

preprocessing → document layout analysis → indexing → information extraction → postprocessing

The Challenge - Problems in Document Processing

According to a McKinsey report, employees spend 1.8 hours every day, 9.3 hours per week, on average, searching and gathering information

- Businesses generate and manage vast amounts of documents of different formats, layouts, and languages

- Manual document processing is time-consuming, error-prone, and inefficient

- Existing systems often struggle with diverse document formats and complex layouts

Gathering → Ingestion → Recognition and Extraction → Validation → Use

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<d2>39 mq</d2>
<d3>via Geofilo</d3>
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The Solution - Altilia Intelligent Automation (AIA) Platform

The platform is divided into three modules:
Teach, Automate, and Understand.

- AIA platform is a comprehensive IDP solution designed to empower business experts to automate their document processing workflows

- It is a no-code solution, meaning business experts can train AI models without any coding skills

- Provides advanced features for data annotation, ML model training, and automation

Teach Module - transfer knowledge into AI models

Capabilities

- Enables business experts to annotate documents, fine-tune pre-trained machine learning models, and create complex AI skills

- Reduces the need for deep AI expertise, making IDP more accessible to businesses

Composed of three main tools
- **Altilia Labels**: Document Annotation and Dataset Creation
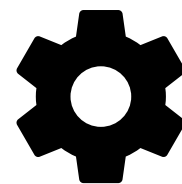- **Altilia Models**: AI Models Training and Fine-Tuning
- **Altilia Skills**: Complex AI Skills Creation
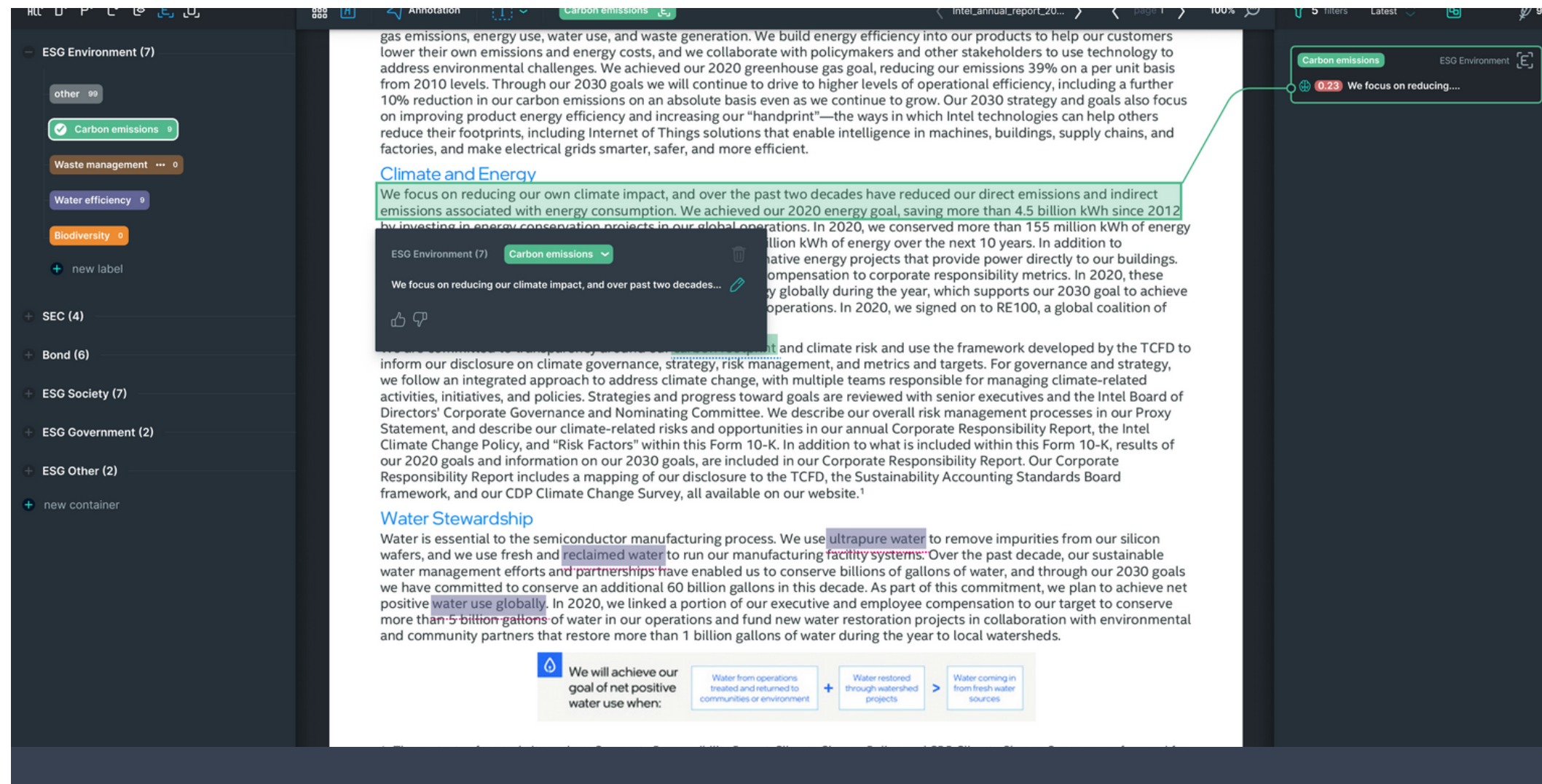
Teach

Altilia Labels

Point-and-click document annotations, reducing annotation workloads

Powered by active learning and auto-labeling algorithms

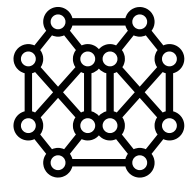Supports seamless ingestion of documents of any type and format
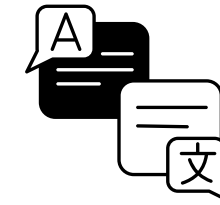
Provides multi-language support and recognizes complex document layouts and structures

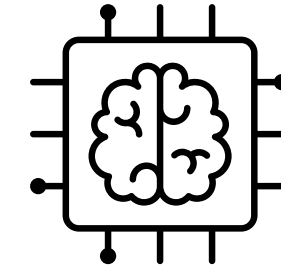Enables semantic annotation and optimized techniques for different machine learning tasks
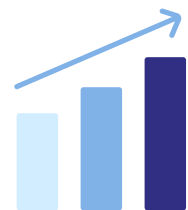
Teach

Altilia Models

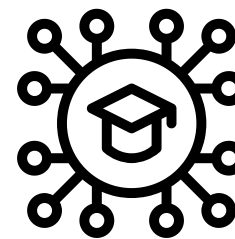Offers a library of pre-trained models for fine-tuning

Features robust transfer learning and connection with Hugging Face repository

Custom AI models can be imported and trained with datasets.

Tracks behavior and performance of models with validation on metrics

Supports continual learning and few-shot learning
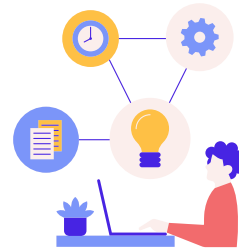
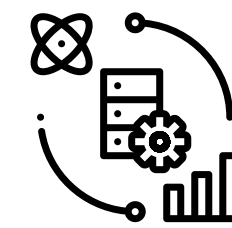Provides support for over 50 languages

Teach

Altilia Skills

Combines multiple AI models, data functions, and knowledge-graph capabilities
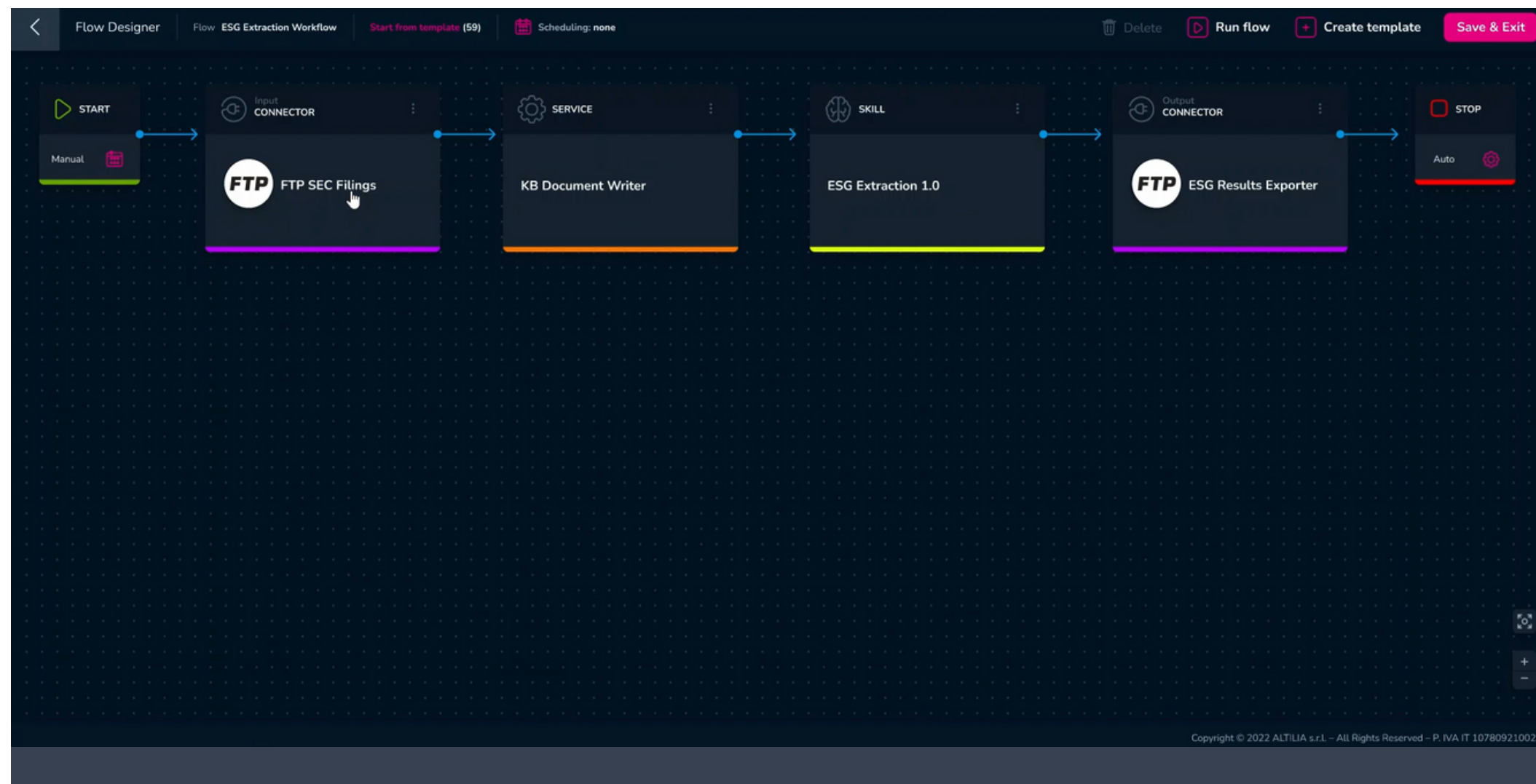

Enables advanced document processing skills for standard and complex documents

Supports framed and unframed tables, text, charts, columns, and backgrounds

Automate - AIA skills into processing workflows

Capabilities

- Integration of multiple AI skills and models with RPA capabilities

- Setting up connectors for workflow integration with external systems

- Provides a review and validation tool for enhancing ML models accuracy and performance
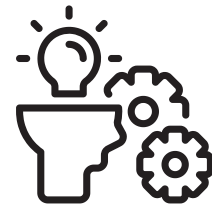
Composed of three main tools:
- **Altilia Flows**: Process Automation
- **Altilia Reviews**: Human-In-The-Loop Validation
- **Altilia Connectors**: Platform Interoperability

Automate

Altilia Flows

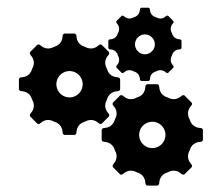Simplifies complex, document-intensive processes

Creation and design of automated workflows

Workflow templates can be customized by combining different tasks

Allows configuration of input/output connectors, execution behavior, and scheduling

Can be executed in attended and unattended mode

Automate

Altilia Reviews

Human-In-The-Loop AI mechanism for reviewing and validating results

Validates data, metadata, and concepts obtained from workflow execution

Enables continuous monitoring and training of AI models

Provides point-and-click interface for validation using semantic faceted search

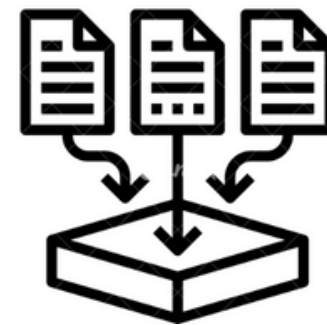Supports explainable AI features for trustworthy applications

Automate

Altilia Connectors

Altilia Connectors enable data exchange between internal and external sources

Pre-built connectors integrate workflows with RPA, CMS, ERP, CRM systems, and more

Support for ingestion from any internal or external source

Special connectors for web wrapping and scraping techniques for ESG data collection

Understand - advanced analytic for insights

Capabilities

- Tools for data representation, semantic queries, and report generation

- Provides advanced analytic and knowledge graph capabilities

- Extracts insights from processed documents, aiding decision making and strategy formulation
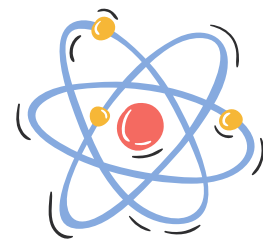
Composed of three main tools:
- **Altilia Knowledge Graphs**: Internal Data Representation
- **Altilia Searches**: Search and Sort Information
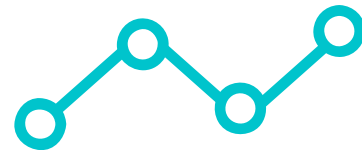- **Altilia Insights**: Analysis and Reporting
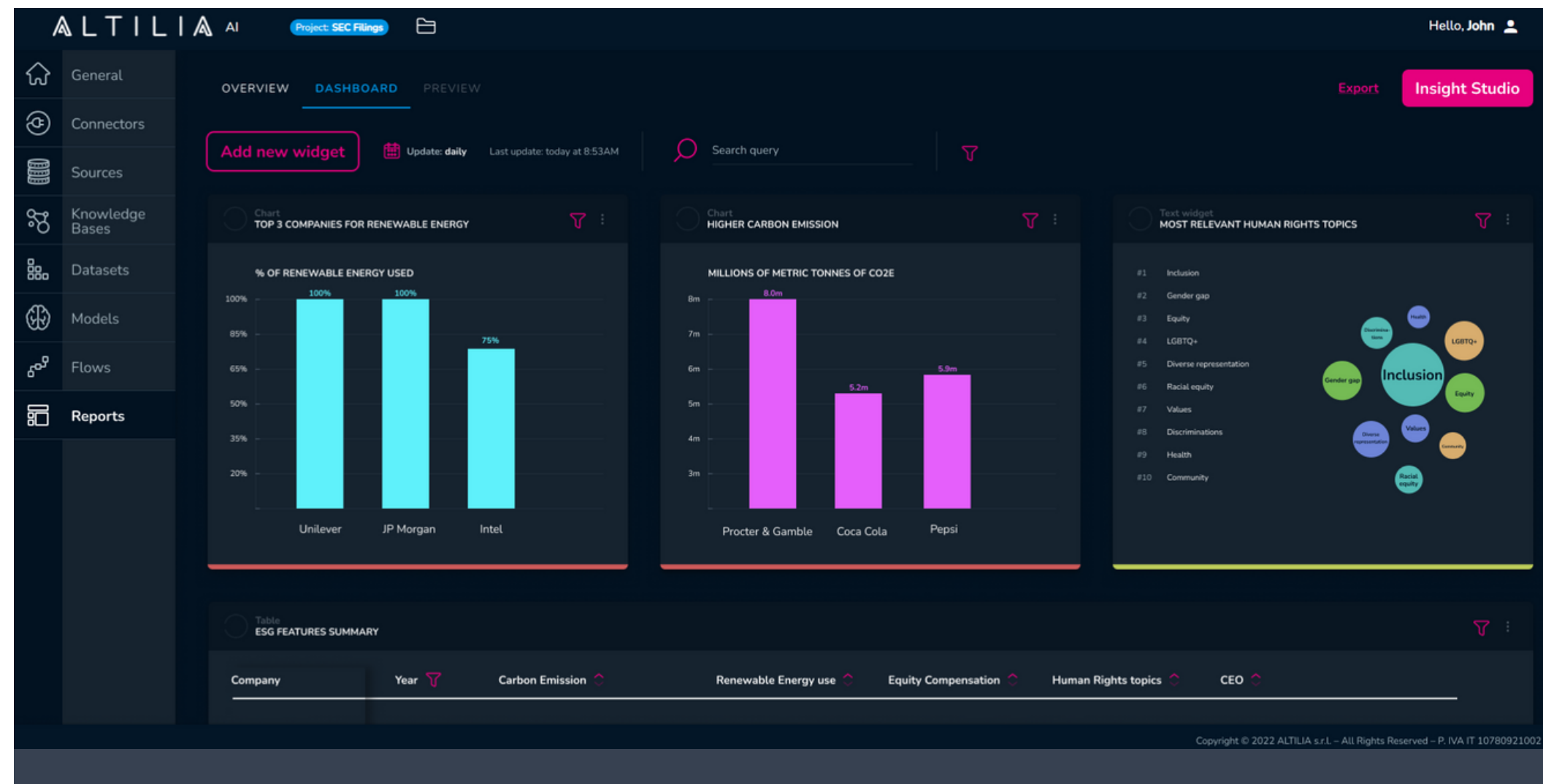
Understand

Altilia Knowledge Graphs

All documents and data are indexed and handled by a knowledge base

Multi-structured attribute graph enables semantic searches, querying and reporting

Simplifies semantic document indexing and data conceptualization

Combines symbolic AI with machine learning for training, automation, and decision-making
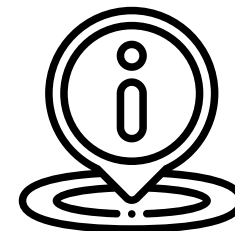
Understand

Altilia Searches

Processed documents and data are indexed in the Altilia Knowledge Base

Altilia Searches offers a user-friendly neural search engine

Advanced semantic search engine for locating specific information

Supports multi-faceted searches and natural language queries

Provides search by similarity and answers to natural language questions

Automate

Altilia Insights

A conversational decision intelligence tool

Understands data and metadata within the Altilia Knowledge Graph

Enables multi-dimensional reports with natural language queries

Allows exporting charts and reports, as well as sharing dashboards with coworkers

Conclusion

AIA platform offers a comprehensive solution to the challenges in document processing

- The *Teach* module simplifies the creation of complex AI models, making AIA accessible to a wide range of users
- The *Automate* module offers an intuitive visual workflow editor and a wide range of connectors, simplifying the automation process
- The *Understand* module's semantic search and knowledge graph capabilities make retrieving documents and insights fast and straightforward

AIA's capabilities will be extended towards a complete machine reading comprehension system, providing full question-answer features for efficient information extraction from documents.

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Thank you!

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