



AVEVAWORLD

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APRIL 8, 2025

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# From Data to Decisions

How AVEVA AI is Shaping the Future of Industry

Jim Chappell, VP & Global Head of AI

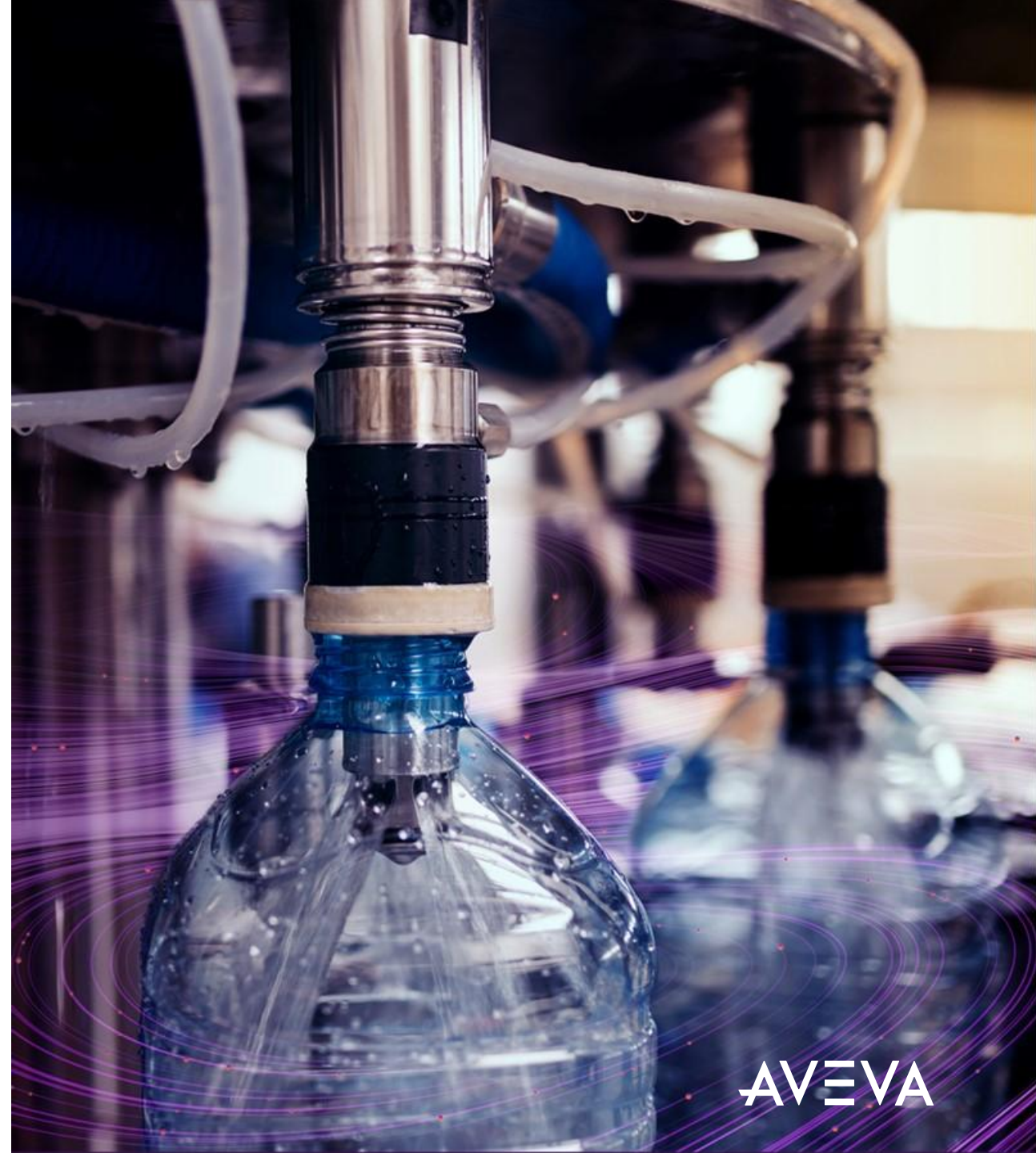
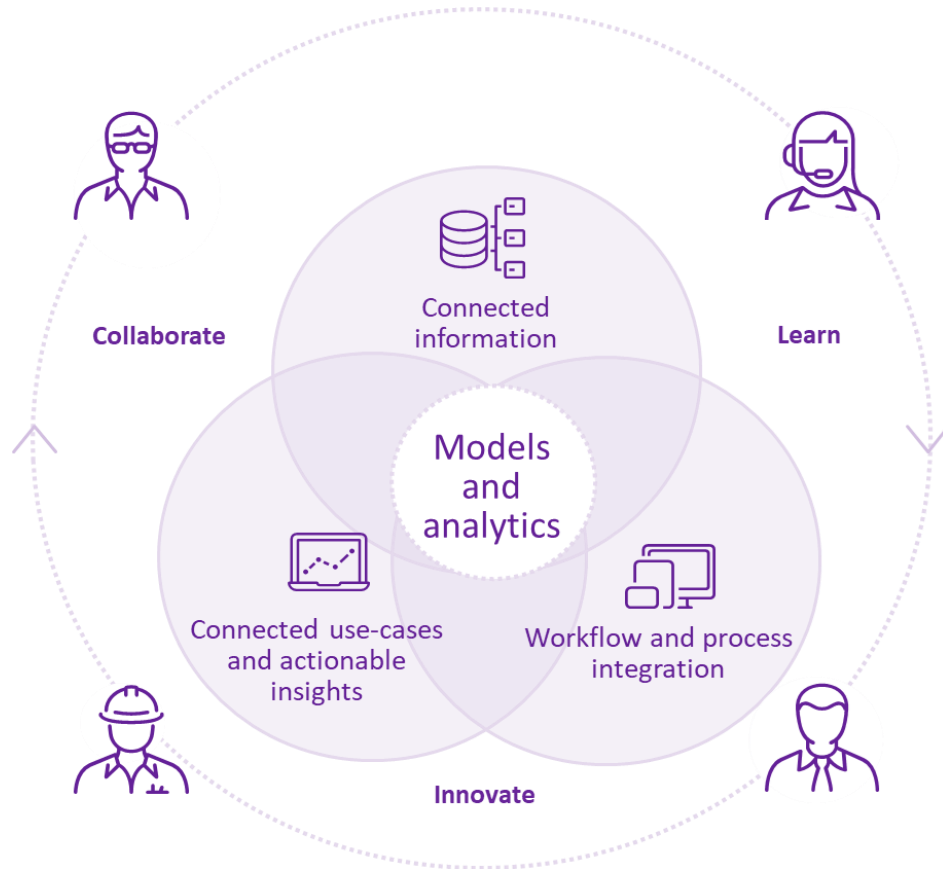
Lori Warda, AI Product Director

AVEVA

# What is Industrial AI?



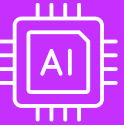

Not just technology

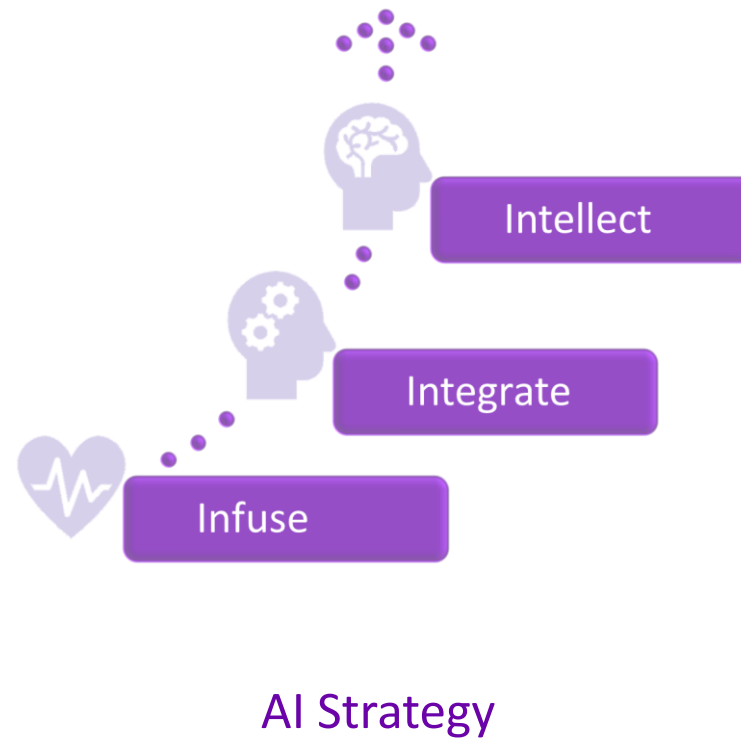
Not just one thing



# AVEVA and AI: Not just technology

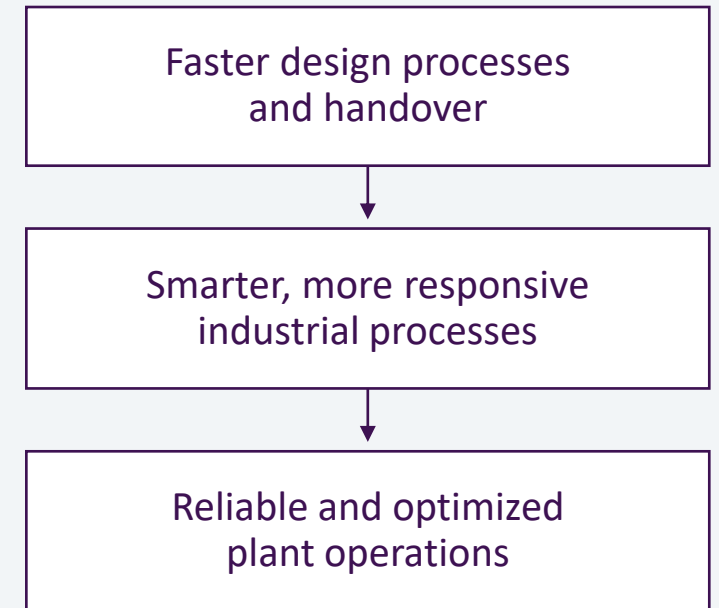
## Industrial Intelligence

	20+ years experience in industrial AI
	Strong domain and industry expertise
	19 AI infused products
	Sustainable and actionable insights

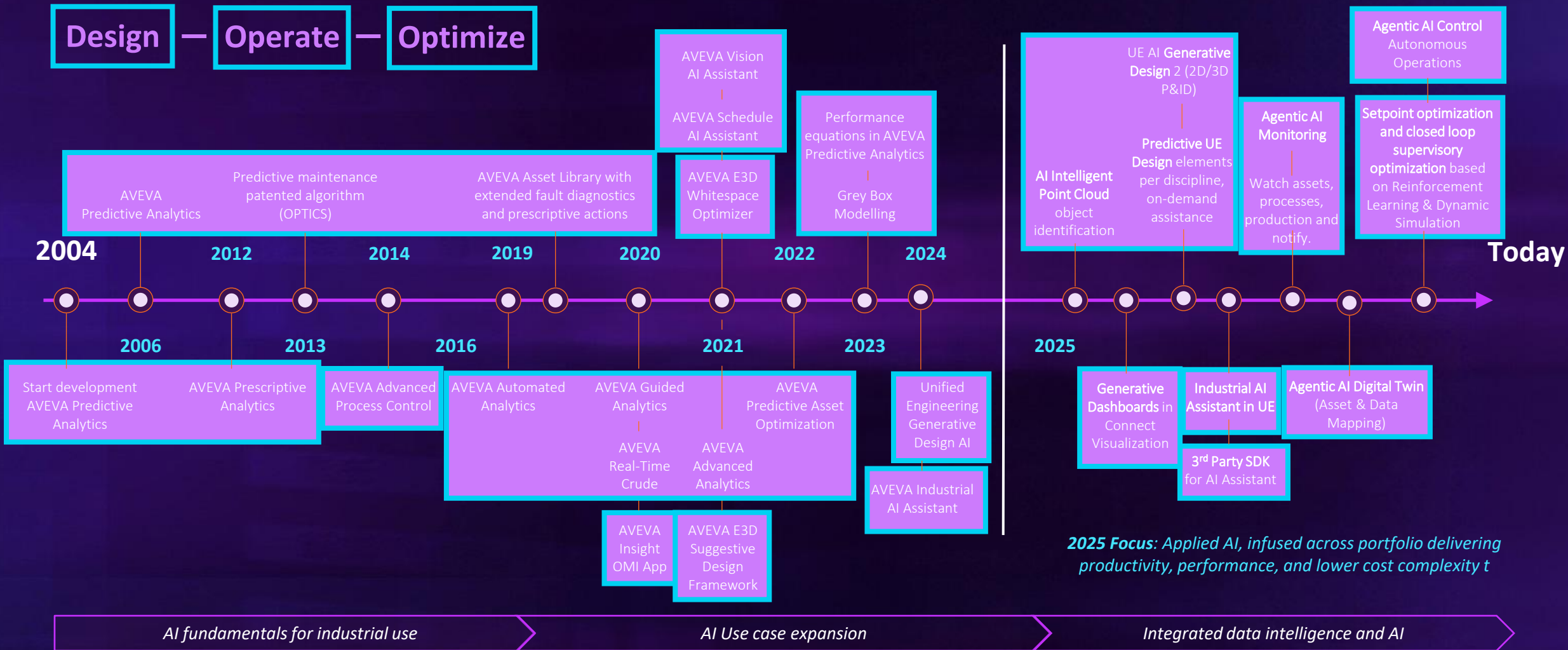


## Data and analytics across the full lifecycle

Design | Operate | Optimize



# AI Evolution: Accelerating expertise, innovation in Industrial AI





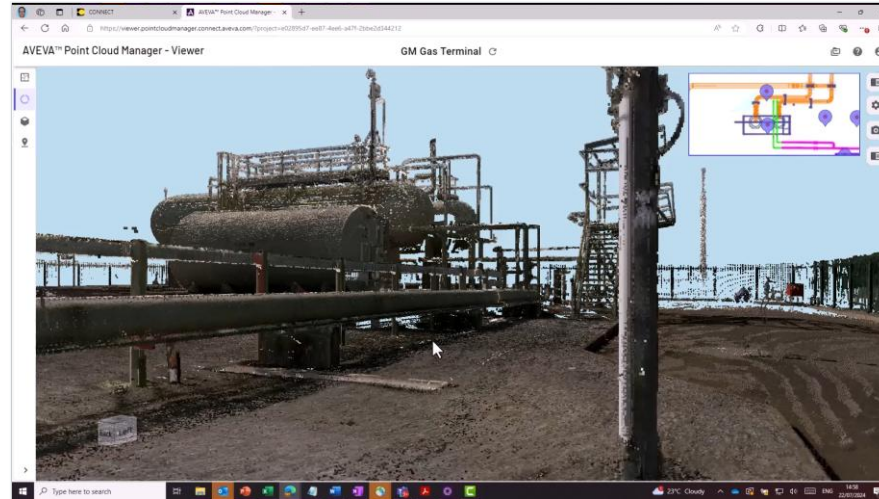
AI

DESIGN

# The Future of Engineering Design

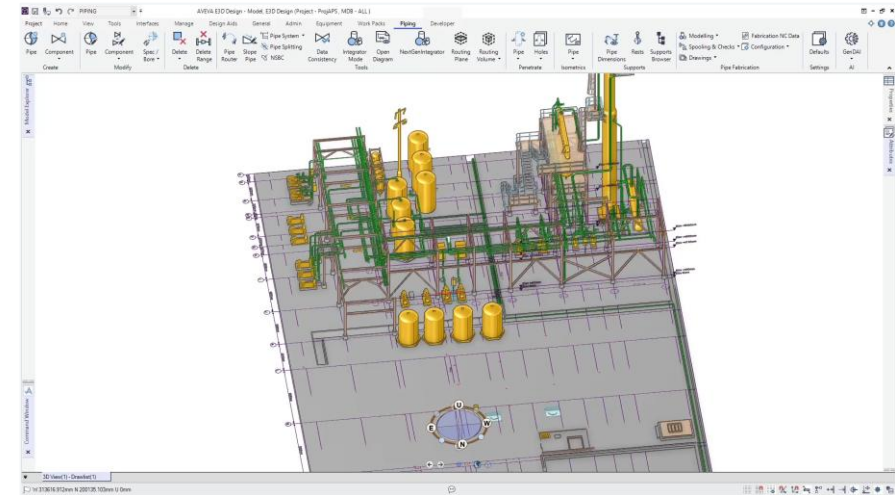
Design

## Intelligent Point Cloud



- Trawl through massive amounts of point cloud data
- Quickly & easily understand what you're looking at
- Automatically classify & tag identified objects
- Eliminate the time & pain of manually locating and tagging maintainable assets/equipment items

## Generative Design AI (GenDAI)



- Generate feasible design options faster using an end-to-end, environment-aware AI design solution
- Minimize human labor in creating 3D models
- Clash free out-of-the-box that allows for visual comparison and modification
- Initial focus on automated 3D pipe routing\*
- Future: detailed design stage and entire plant model

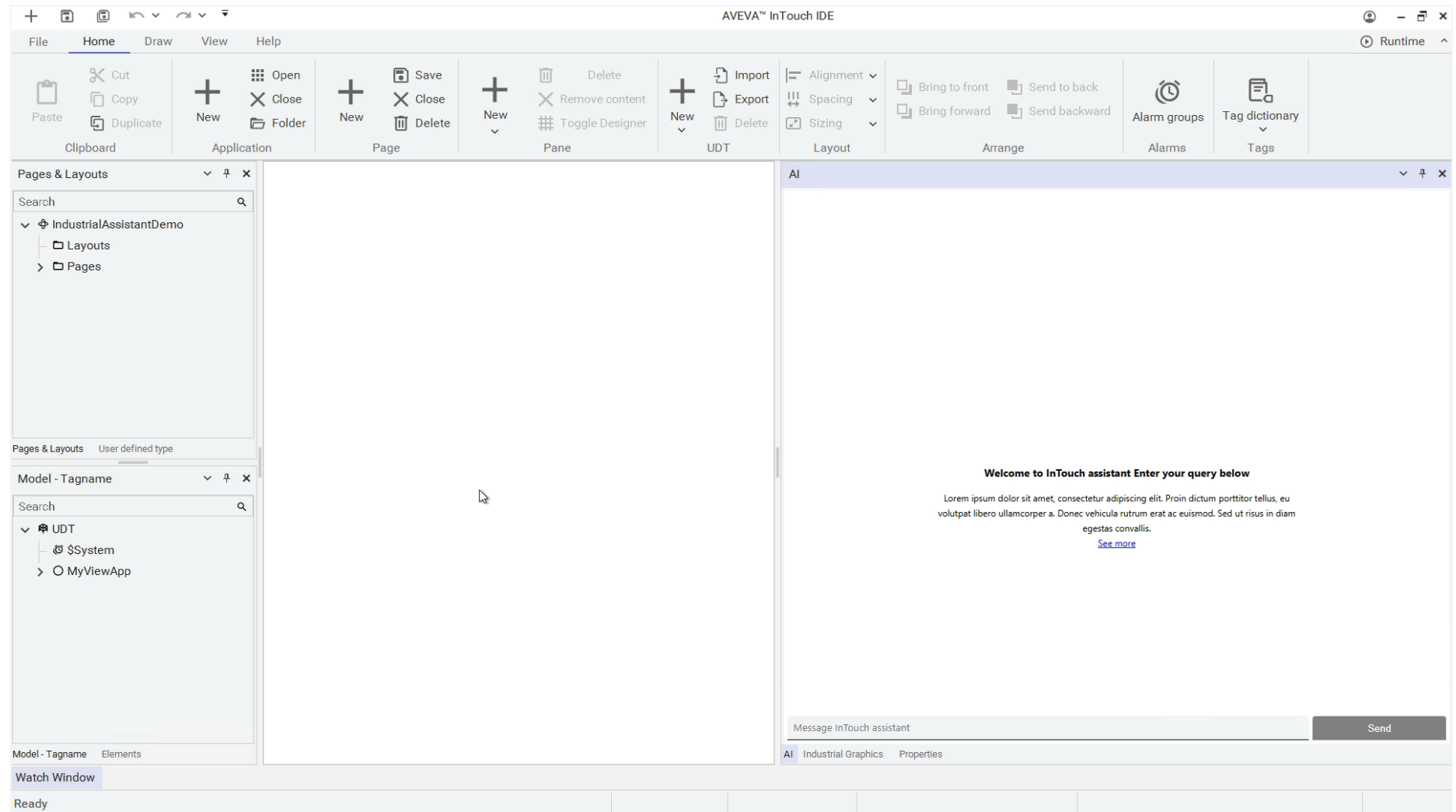
AI

OPERATE



# AI-driven HMI/SCADA

## InTouch HMI



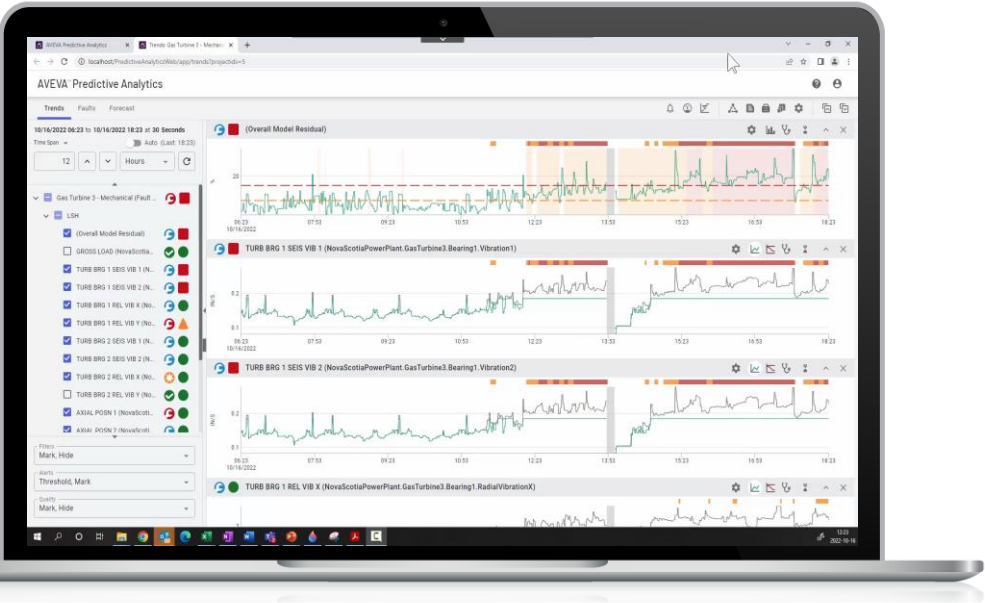
AI

OPTIMIZE

# Integrated AI

Predictive + Prescriptive + Prognostic

Optimize



✓ **Historical**

**What Happened**

*Historical Domain*

✓ **Real-Time**

**What's Happening**

*Real-Time Domain*

**+ Predictive**

**What If**

*Machine Learning Domain*

**+ Prescriptive**

**What to do**

*Maintenance Action Domain*

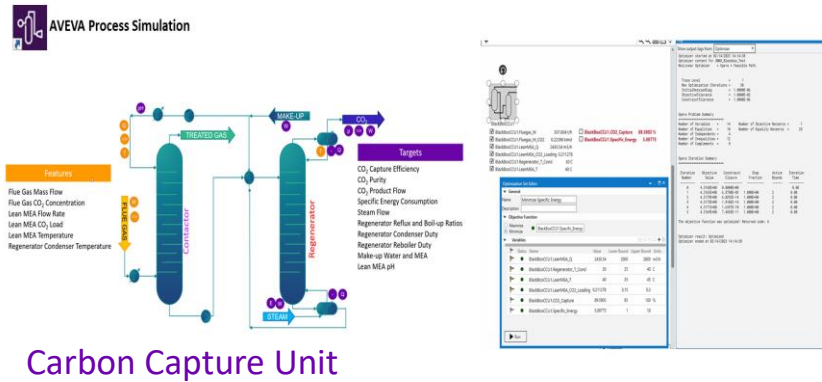
**+ Prognostics**

**How bad will it get**

*Artificial Intelligence Domain*

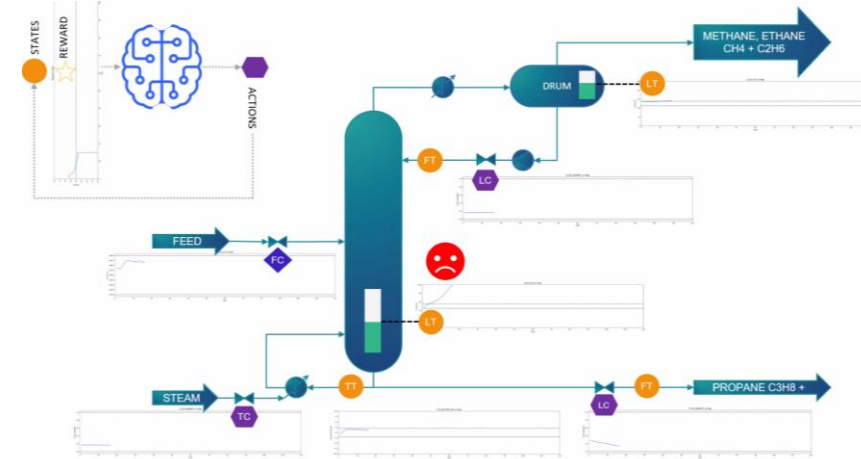
# AI + Simulation

## Grey-box Models



- Combine AI models with physics-based to get the best of 'both worlds'
- Greatly improve speed
- Reduce deployment and tuning time
- Create a portable model that can be run on-prem, at the edge, or in the cloud

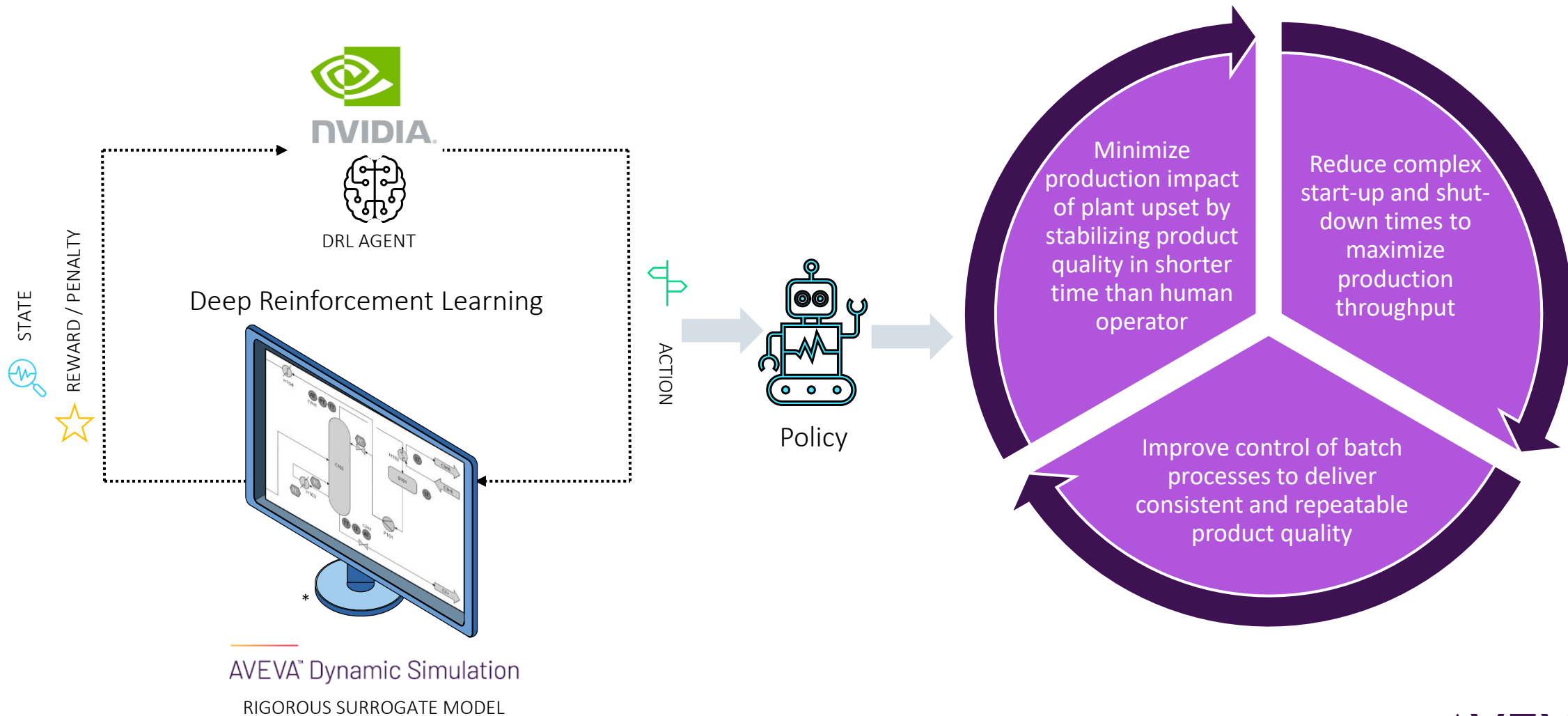
## Autonomous Operations



- AVEVA Dynamic Simulation + Reinforcement Learning + GPUs
- Quickly optimize Setpoints for complex & transient processes
- Manage start-ups & shutdowns
- Quickly stabilize after changing feed levels
- Reduce GHG emissions

# Autonomous Operations

## AVEVA Simulation + NVIDIA Deep Reinforcement Learning





AI

# What's next?

# AI Strategy: Where are we headed?

## Available

Data & Information Level  
**“Ask a complicated question”**

## Coming soon

Functional Software Level  
***“tell it what you want it to do”***

## In development

Unified User Experience  
***“Agentic AI”***

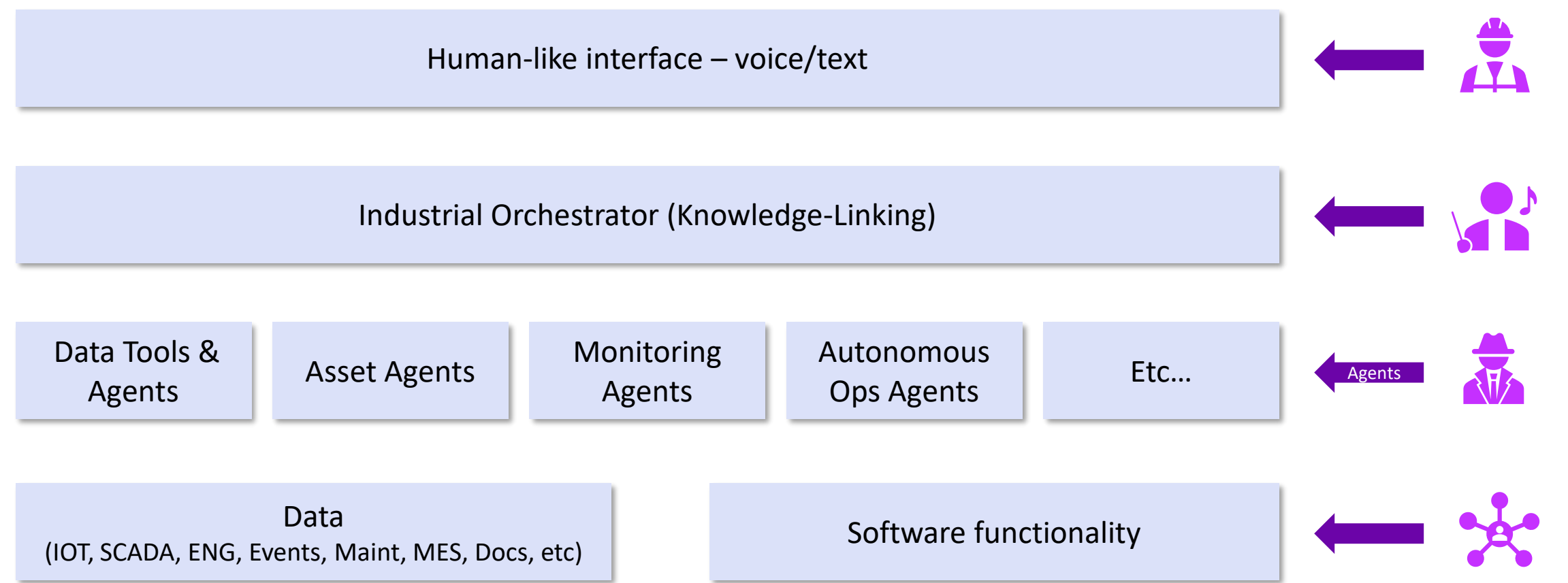


# Agentic AI

AVEVA

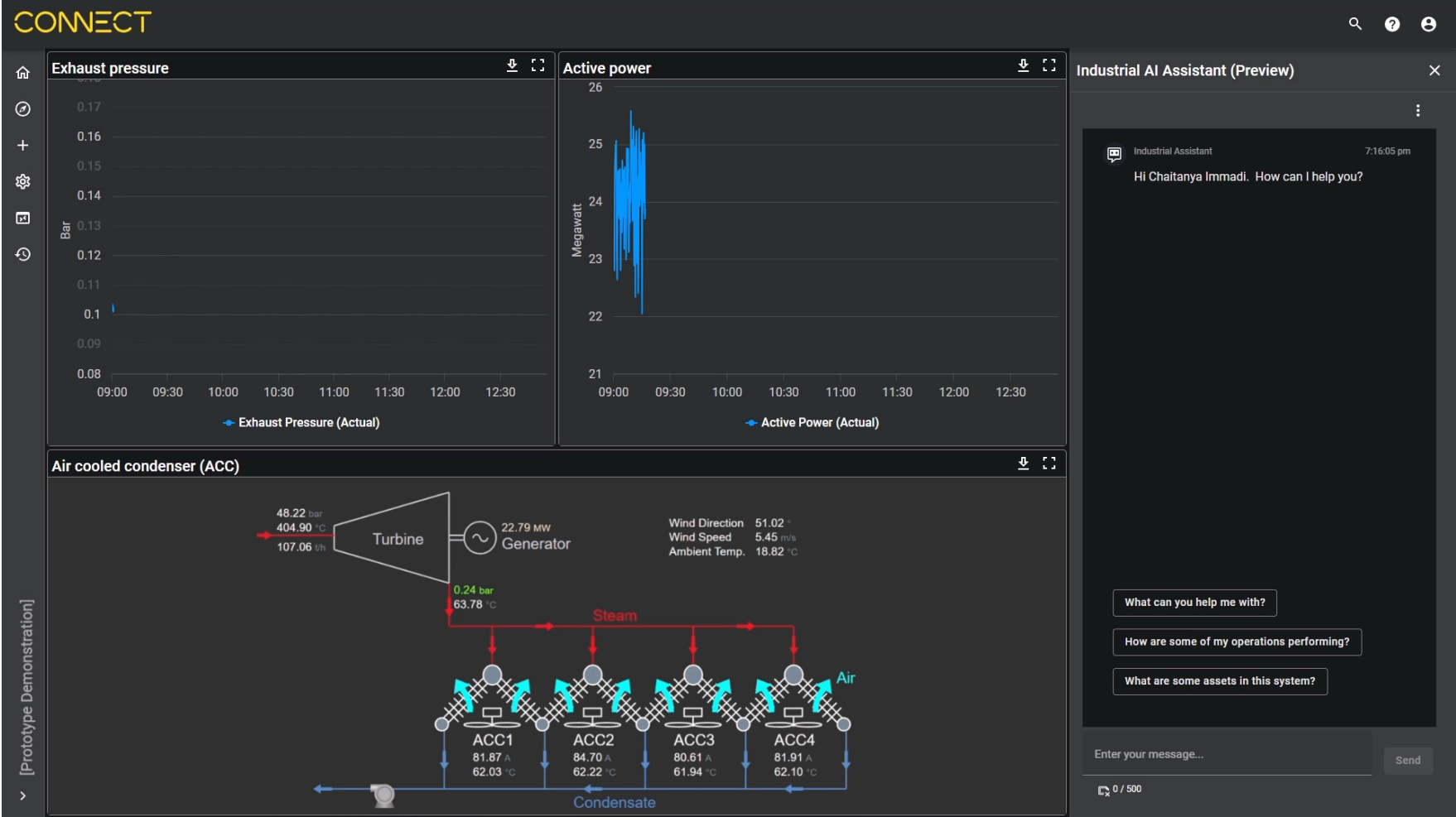
# Industrial AI Assistant

Generative AI + Agentic AI



# Industrial AI Assistant

## Monitoring Agent







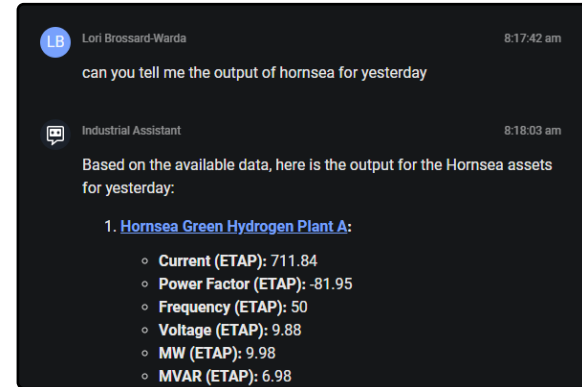
# Industrial AI Assistant

*Bringing it all together*

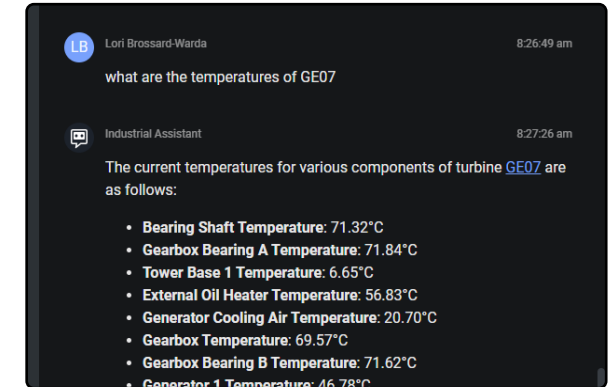
# Industrial AI Assistant

Natural language interface  
to your data in CONNECT

## Natural language interface



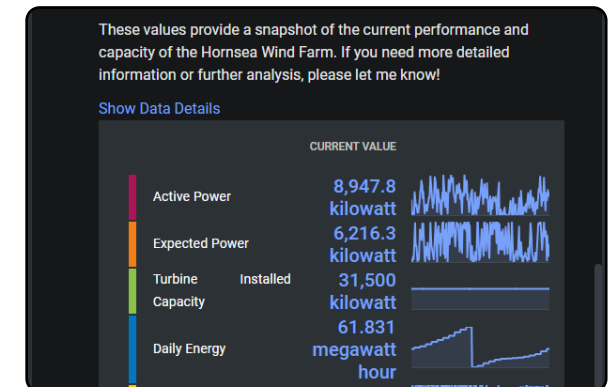
## Content search & summarization



## Citations show work (transparency & traceability)



## Generate dashboards & charts inline



# Industrial AI Assistant

Leveraging the power of Generative AI in CONNECT

Integrate the power of Generative AI with your industrial data.

Quickly find and summarize information by asking a digital intellect natural language queries through a chat interface.

Fast onboarding to supplement SMEs and non-SMEs.

Model is never trained using data from the customer's account.

*What are the bearing and nacelle temperatures for GE07*

The screenshot shows a chat interface with a dark background. At the top, a user message from 'Lori Brossard-Warda' (LB) asks: 'what has been the wind velocity at hornsea wind farm this week'. The timestamp is 10:28:22 am. Below this, the 'Industrial Assistant' responds with a timestamp of 10:28:38 am. The response includes a title 'Wind Velocity Data at [Hornsea Wind Farm](#) for This Week', a summary paragraph, and a list of wind speed metrics. At the bottom, there is a text input field with the placeholder 'Enter your message...' and a 'Send' button.

**Wind Velocity Data at [Hornsea Wind Farm](#) for This Week**

Based on the available data, here are the relevant metrics for wind velocity at the Hornsea Wind Farm over the past week:

**1. Wind Speed:**

- **Current Value:** 5.55 meters per second (m/s)
- **Minimum:** 2.32 m/s
- **Maximum:** 18.69 m/s
- **Average:** 8.64 m/s

**Summary**

The wind speed at Hornsea Wind Farm this week has varied significantly, with a minimum of 2.32 m/s and a maximum of 18.69 m/s. The average wind speed over the week has been 8.64 m/s. This data indicates that the wind conditions have been quite variable, which is typical for offshore wind farms.

If you need more specific details or further analysis, please let me know!

*Was the temperature for my bearing higher this week or last week?*

*Do I have a dashboard on utilization?*

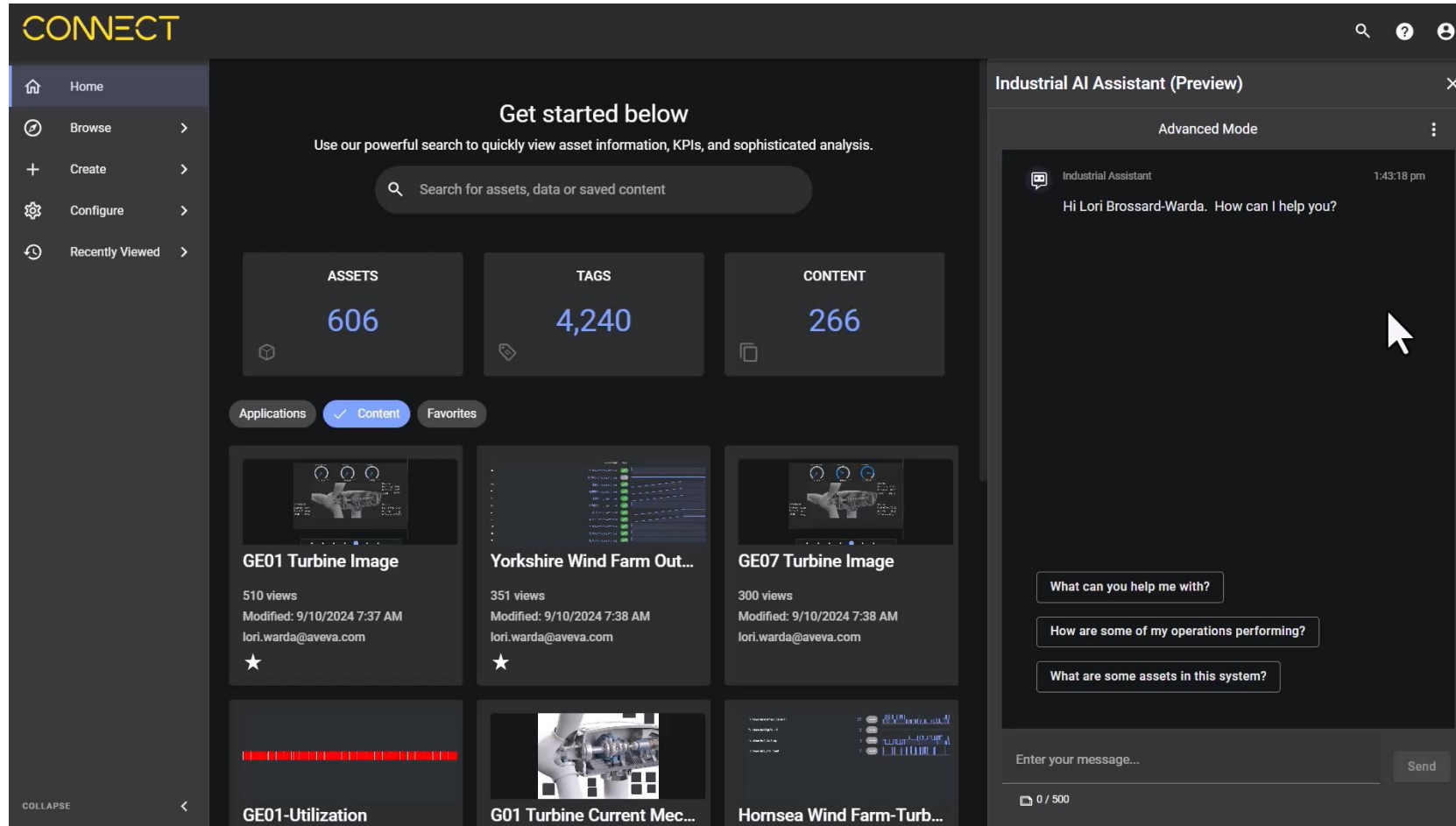
*Do I have any stoppage events in Hornsea Wind Farm for the last 24 hours?*

*Does the document provide guidance on maintenance activities for high bearing temperature?*

*Do we have a 3D Model for Hornsea Wind Farm?*

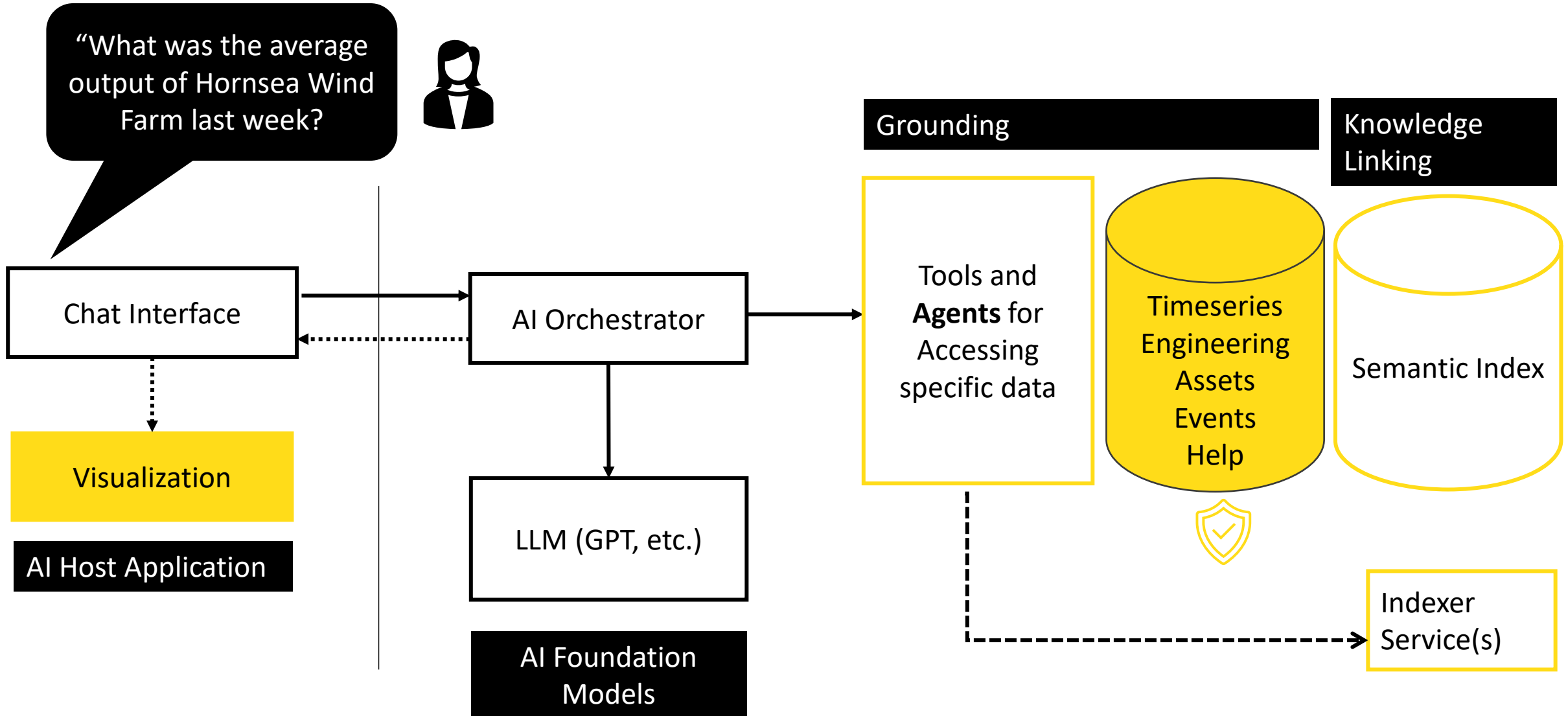
*Do I have a trend for GE01 output?*

# Industrial AI Assistant: generating visualizations



- Save time and clicks by using natural language to create visualizations
- Initially, will be very explicitly – create a visualization with a line chart that shows the temperature data from GE01
- Expanding to more implicit requests – create a visualization highlighting the operating conditions at GE01
- Extending the learning and capability to other products / solutions

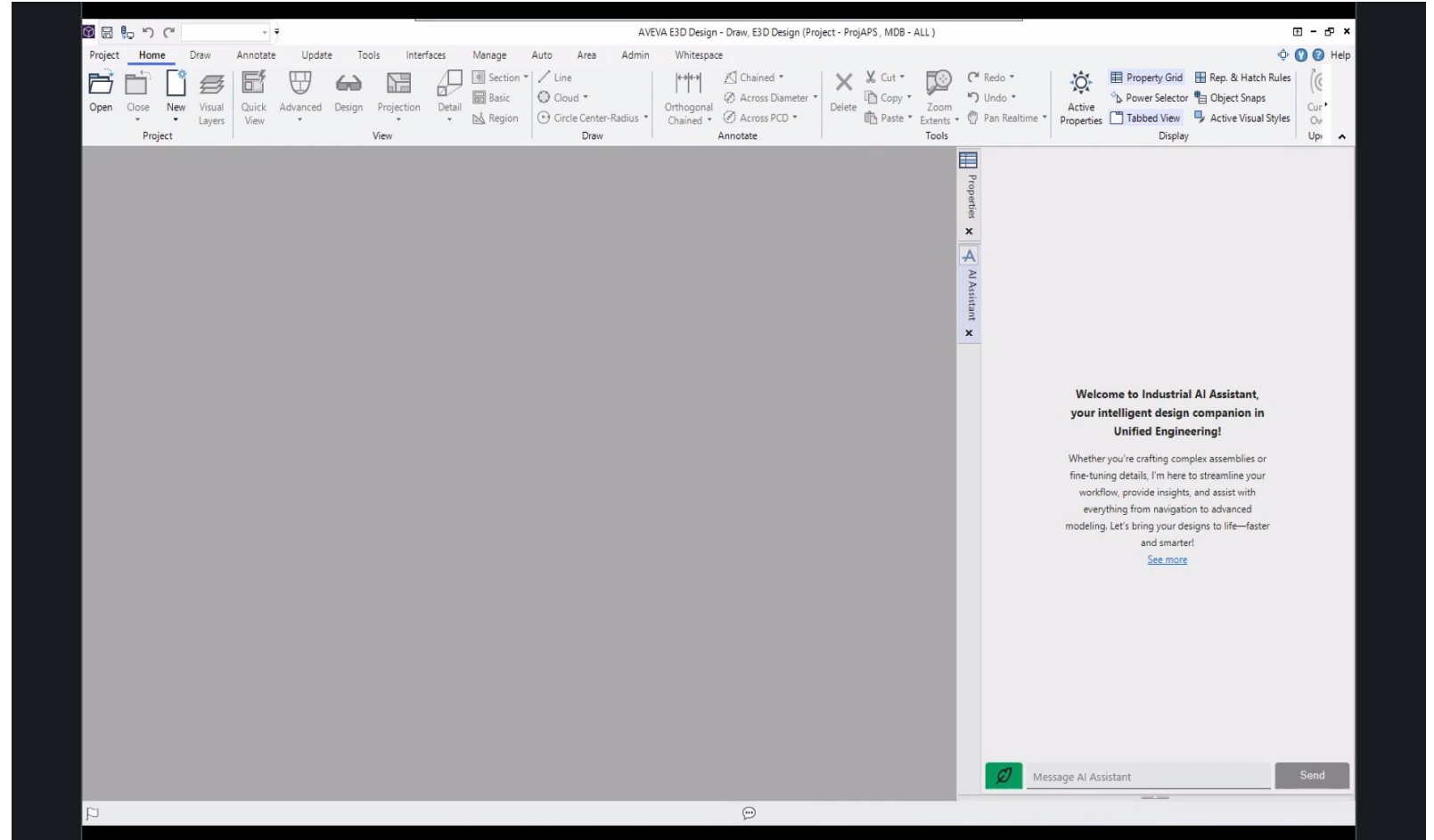
# Industrial AI Assistant: architecture



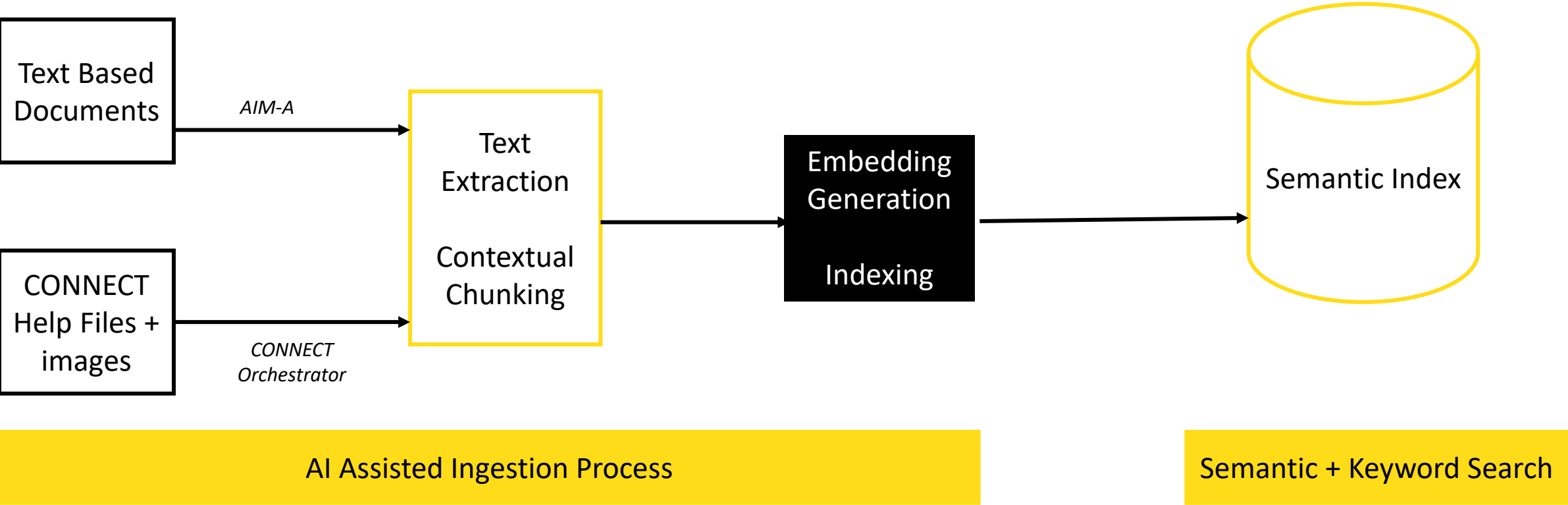


# Industrial AI Assistant: guided help

- Receive targeted help and learning through interactive
- Adapt how industrial software tools are learned and used.
- Improve engineering Productivity and experience.
- Reduce onboarding time.
- Direct-action assistance: “Do it for me”



# Deep dive into Document Ingestion



# Industrial AI Assistant: document query

The screenshot displays the 'CONNECT' application interface. On the left is a sidebar with navigation options: Home, Browse, Create, Configure, Query Builder, and Recently Viewed. The main area features a 'Get started below' section with a search bar and three summary cards: ASSETS (612), STREAMS (2,527), and VISUALIZATIONS (272). Below these are tabs for Experiences, Visualizations, and Favorites. Two featured items are shown: 'GE01 Turbine Image' and 'Yorkshire Wind Farm Output', each with view counts and modification details. On the right, an 'Industrial AI Assistant (Preview)' chat window is open, showing a greeting from 'Industrial Assistant' and a list of suggested queries: 'What can you help me with?', 'How are some of my operations performing?', and 'What are some assets in this system?'. A text input field at the bottom of the chat window is labeled 'Enter your message...' and has a character count '0 / 500'.

- Find content with all indexed documents and get a nicely formatted summary
- Find content within a specific document and get a summary

# Trustworthy AI, built for your operations

## Guardrails

- **Clear instructions** guide the AI to deliver responses that are transparent, helpful, and aligned with your goals.
- When data is unavailable, the AI acknowledges it, **avoiding speculation** or fabricated answers.
- Built-in logic checks help maintain **response accuracy and quality**.

## Grounding

- Every answer is **traceable** to a known source, so you can validate the insight.
- The AI works with your real data and systems, **no assumptions** when facts are missing.

## Security/ Property

- The AI follows your existing **access controls** with no additional setup.
- Your data **is never stored or reused**. Each prompt is securely discarded after it's processed.

# Industrial AI Assistant: generating visualizations

**CONNECT**

Home

Browse >

Create >

Configure >

Recently Viewed >

**Get started below**

Use our powerful search to quickly view asset information, KPIs, and sophisticated analysis.

Search for assets, data or saved content

**ASSETS**  
606

**TAGS**  
4,240

**CONTENT**  
266

Applications | **Content** | Favorites

**GE01 Turbine Image**  
510 views  
Modified: 9/10/2024 7:37 AM  
lori.warda@aveva.com

**Yorkshire Wind Farm Out...**  
351 views  
Modified: 9/10/2024 7:38 AM  
lori.warda@aveva.com

**GE07 Turbine Image**  
300 views  
Modified: 9/10/2024 7:38 AM  
lori.warda@aveva.com

**GE01-Utilization**

**G01 Turbine Current Mec...**

**Homsea Wind Farm-Turb...**

**Industrial AI Assistant (Preview)**

Advanced Mode

Industrial Assistant 1:43:18 pm

Hi Lori Brossard-Warda. How can I help you?

What can you help me with?

How are some of my operations performing?

What are some assets in this system?

Enter your message... Send

0 / 500

- Save time and clicks by using natural language to create visualizations
- Initially, will be very explicitly – create a visualization with a line chart that shows the temperature data from GE01
- Expanding to more implicit requests – create a visualization highlighting the operating conditions at GE01
- Extending the learning and capability to other products / solutions



# Industrial AI Assistant: release highlights

## Available now

- Finding and summarizing data by name / asset
- Simple analysis of time-series data
- Finding and summarizing MES events related to an asset
- Asking questions about a specific document
- Asking questions about CONNECT help
- Citations

## Releasing soon

- Describe capabilities – retrieving metadata / applying it in results
- Asking questions about all documents / specific documents and their contents
- Generating dashboards using explicit instructions
- Expanded image understanding in CONNECT help

## Future capabilities

- Agents for ad hoc analytics
- Agents for monitoring and digital twin building
- Expanded access to CONNECT data sources
- Embedding in CONNECT visualization experiences
- Expansion of visualization generation capabilities
- Extending generation capabilities to other use cases, such as SCADA

# Recommended AI Sessions

## **Saipem: From EPC Digital Platform to AI for Engineering**

Wednesday, April 9 @ 2:15pm,  
Room 2007

## **A New Horizon of AI-Driven Autonomous Operations for the Energy Industry**

Tuesday, April 8 @ 3:45pm,  
AVEVA Showcase, Level 1

## **From Data to Decisions: using the Industrial AI Assistant to get there quicker**

Wednesday, April 9 @ 2:45pm,  
CONNECT Lounge, L2 Lobby

## **Predictive Analytics Customer Presentations**

Saudi Aramco, OMYA and SCG Chemicals  
Wednesday, April 9, 1:15pm – 5:00pm,  
APM Track - Room 2002





# Questions?



Please wait for the microphone.  
State your name and company.

## Please remember to...

Navigate to this session in the  
mobile app to complete the survey.

Visit us in the CONNECT area of the Innovation Zone  
on Level 1... Look for the 'Try Me' stations!

# Thank you!



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#### ABOUT AVEVA

AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

Learn more at [www.aveva.com](https://www.aveva.com)

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