



AVEVA WORLD

CONNECT

N

APRIL 2025

# Unlocking the Power of Industrial Data with Real-World Use Cases for **CONNECT** and Databricks



**John Baier**  
VP, Solution Strategy

**AVEVA**



**Glenn Moffett**  
Solution Architect

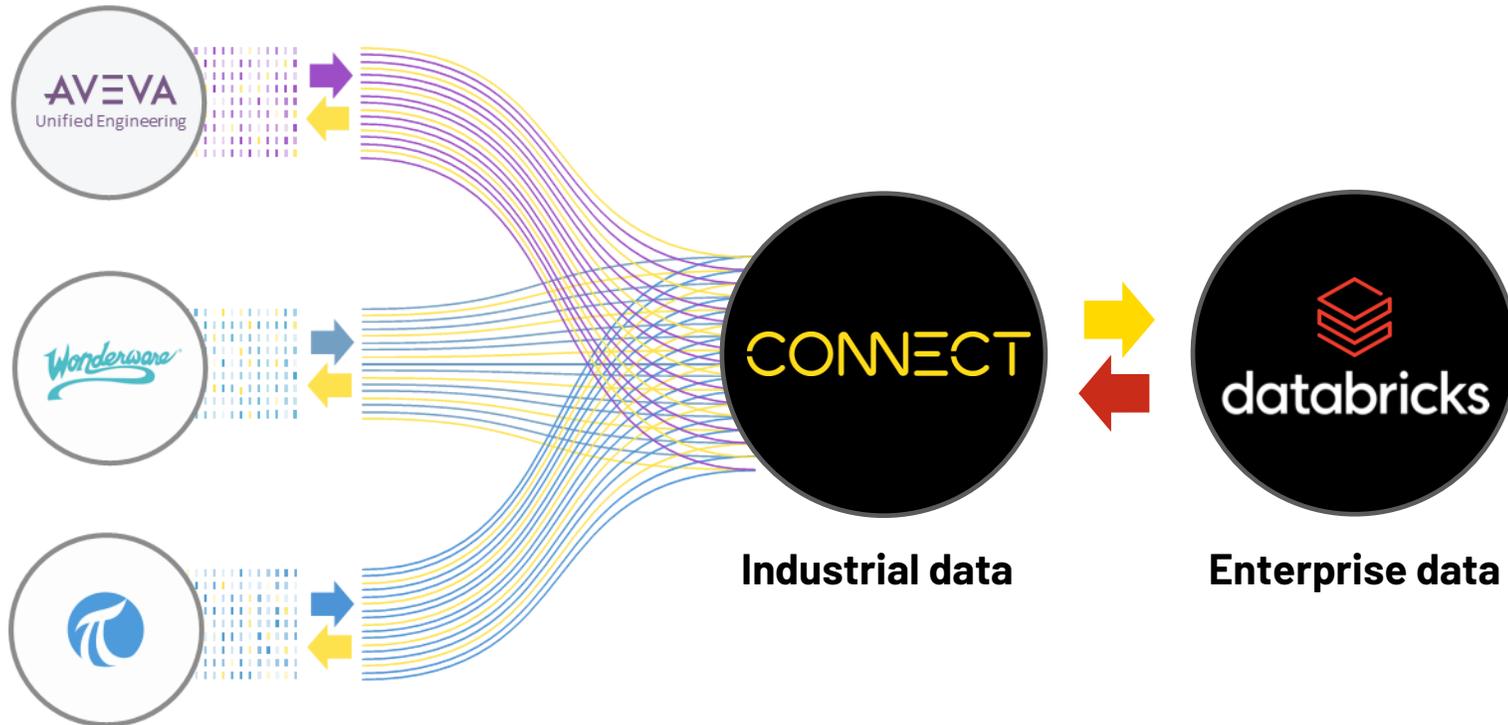
**AVEVA**



# CONNECT + Databricks

Unified data for a smarter, sustainable future

# OT – IT Convergence

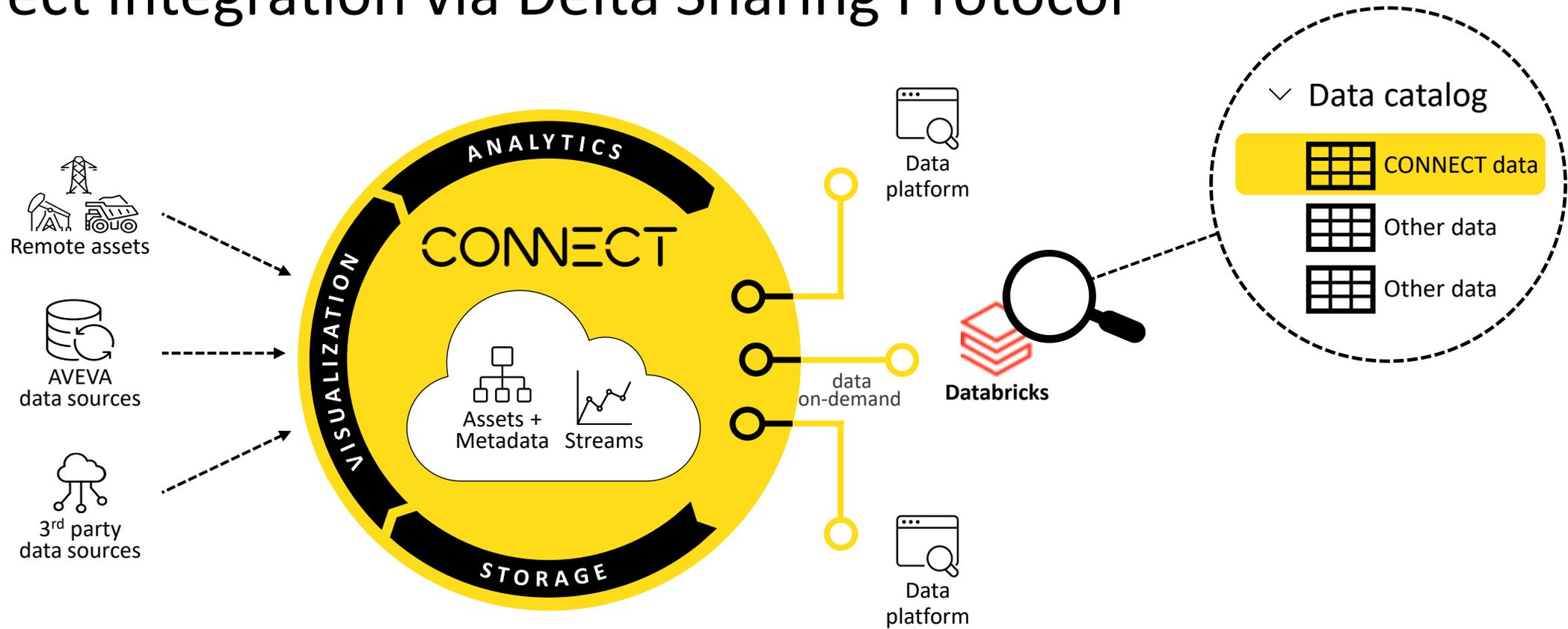


**Data scientist**

```
# query data from data services data view
#
# Specify an initial set of parameters to query the data view
startIndex = str(date.today() - timedelta(days=10))
endIndex = str(date.today()) # 10 days of data
interval = "00:05:00" # interpolate every minute
count = 250000 # max rows per results page
form = "form"
dataView = "AE Wind Turbines" # created data view name
# generate the URL for the data view query
try:
    result2 = client.dataViews.getDataInterpolated(namespace_id,dataView,count,form,startIndex,endIndex,interval)
except Exception as e:
    print(e)
```



# Direct Integration via Delta Sharing Protocol



## DATA INTEGRITY

Make more informed decisions with near real-time, accurate data

## NATIVE CONTEXTUALIZATION

Save interpretation time with ready-to-consume data

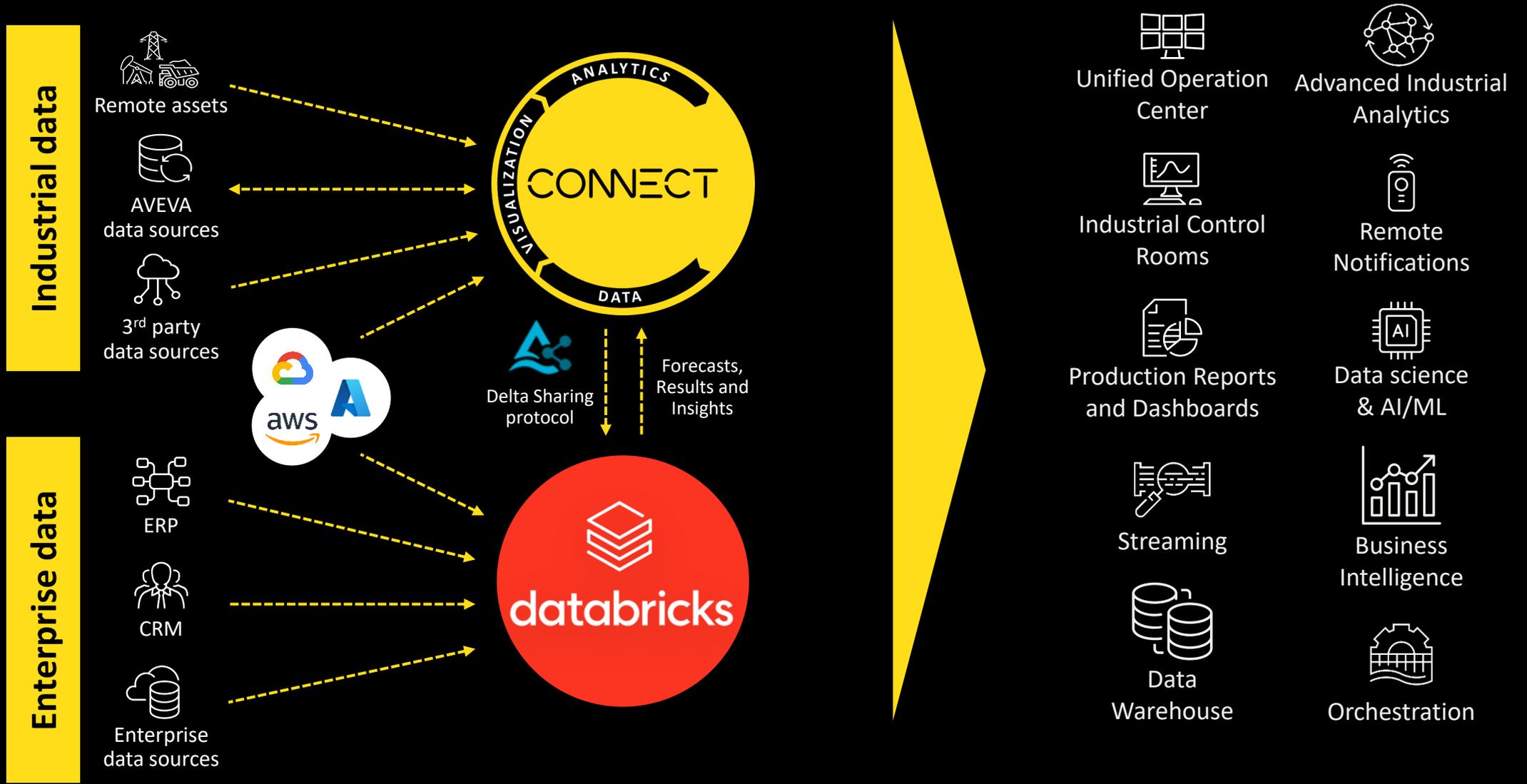
## STORAGE EFFICIENCY

Reduce costs by eliminating duplicated datasets

## STREAMLINED DEPLOYMENT

Out-of-the-box integration, no technical debt left behind

# New Use Cases, New User Personas



# Existing Lighthouse Program Engagements

## Customers already utilizing Virtual Tables



### Mobile Fleet

Fuel Efficiency & Maintenance Reduction

Reduced Data preparation time from weeks into days



### Manufacturing

Identifying performance issues with critical equipment

Simplified Integration, lowering IT expenditure and resources



### Renewable Energy

Forecasting the environmental impact of Battery Storage solution

Accelerated path to value by reducing implementation time through a solution that will scale with their roll-out



### Oil & Gas

Well head Production optimization and Asset health

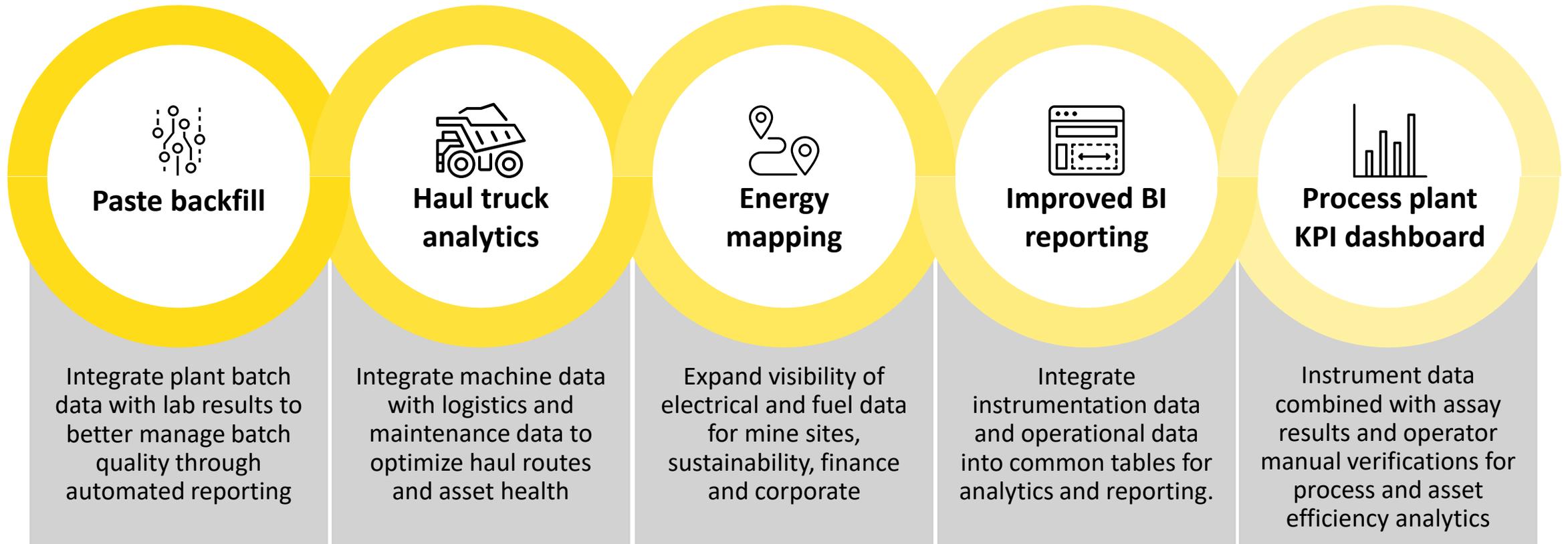
Replace existing PI-based integration, reducing performance concerns and allowing Data Scientists to directly control their data sets

# Mining Company



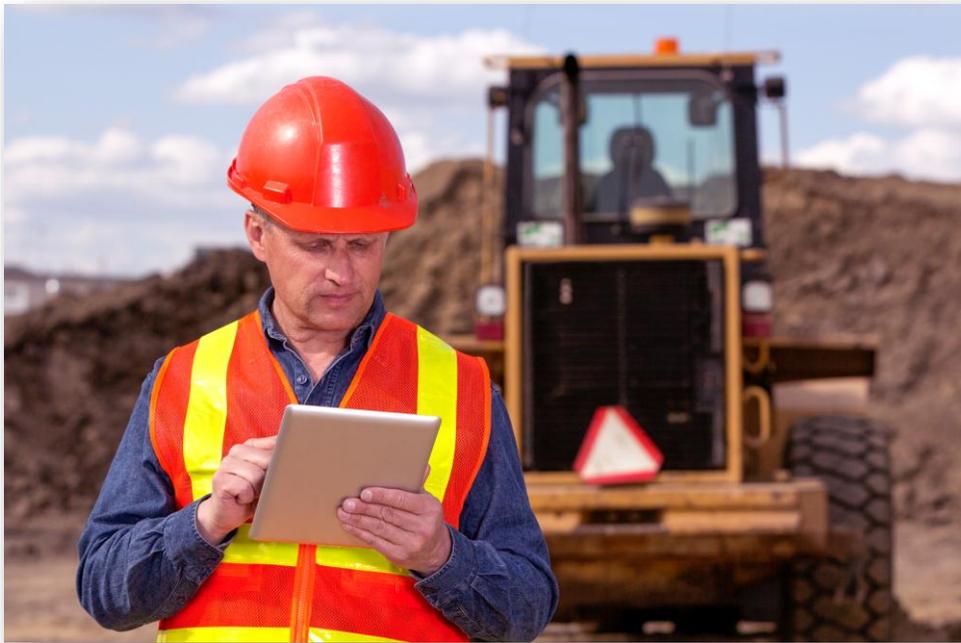
# Analytical projects overview

AVEVA and Databricks integration using CONNECT data services will lower the technical knowledge barriers



# Business challenge and opportunity

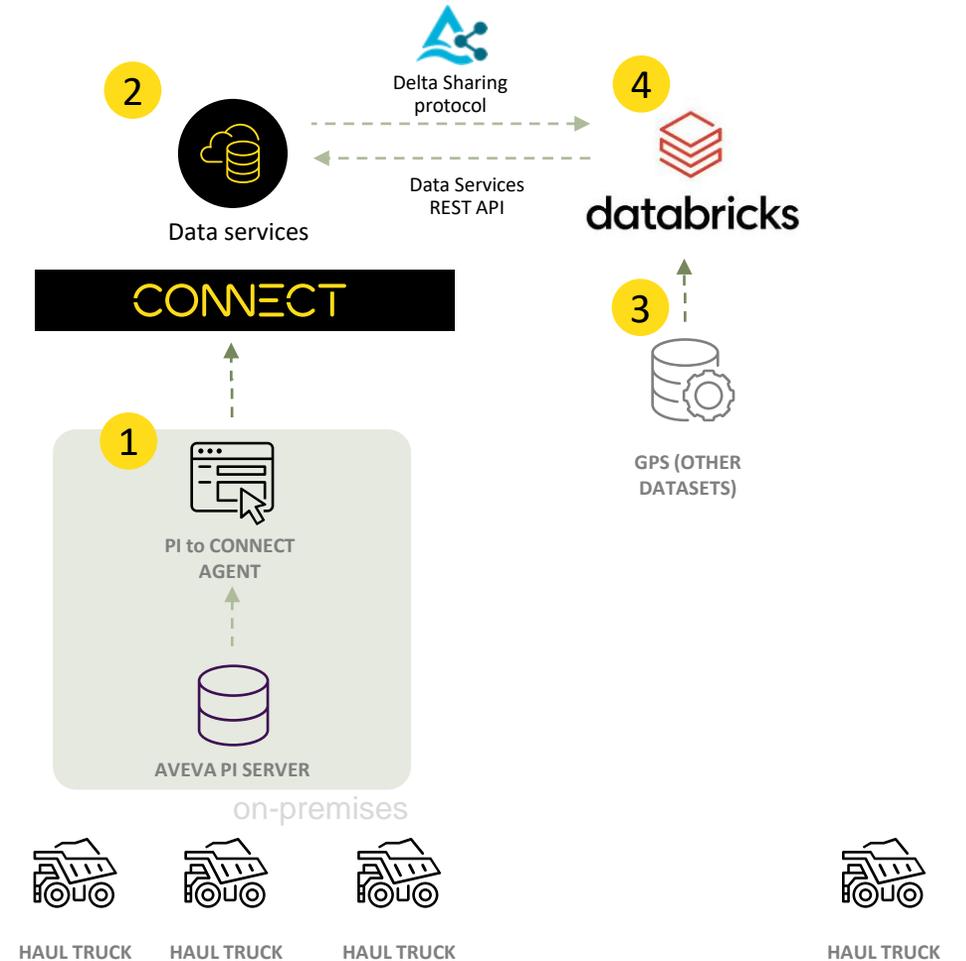
- Many analytics opportunities are limited by data access challenges
- Increase availability of production haul trucks
- Reduce energy intensity and CO2 emissions
- Optimize route/haul road



# Lighthouse architecture

## Data flow

1. Configure dataset transfer
2. Configure data view and virtual table
3. 3rd party and related datasets  
- including GPS truck data
4. Analyze combined datasets in databricks
  - (optional) write data back to CONNECT



## MINING, METALS & MINERAL

# Integrating CONNECT data services and Databricks to improve haul truck analytics

### Challenge

- Lack of integration between data sets limits the opportunity for haul truck analytics related to asset health, operator performance and lowering emissions.
- Secure data integration needs to be easier and faster.
- Creating a scalable data infrastructure across OT and IT is an enabler.

### Solution

- Deploy an end-to-end solution, from operational data using AVEVA PI System to the cloud via CONNECT data services, efficiently enabling use cases within Databricks.

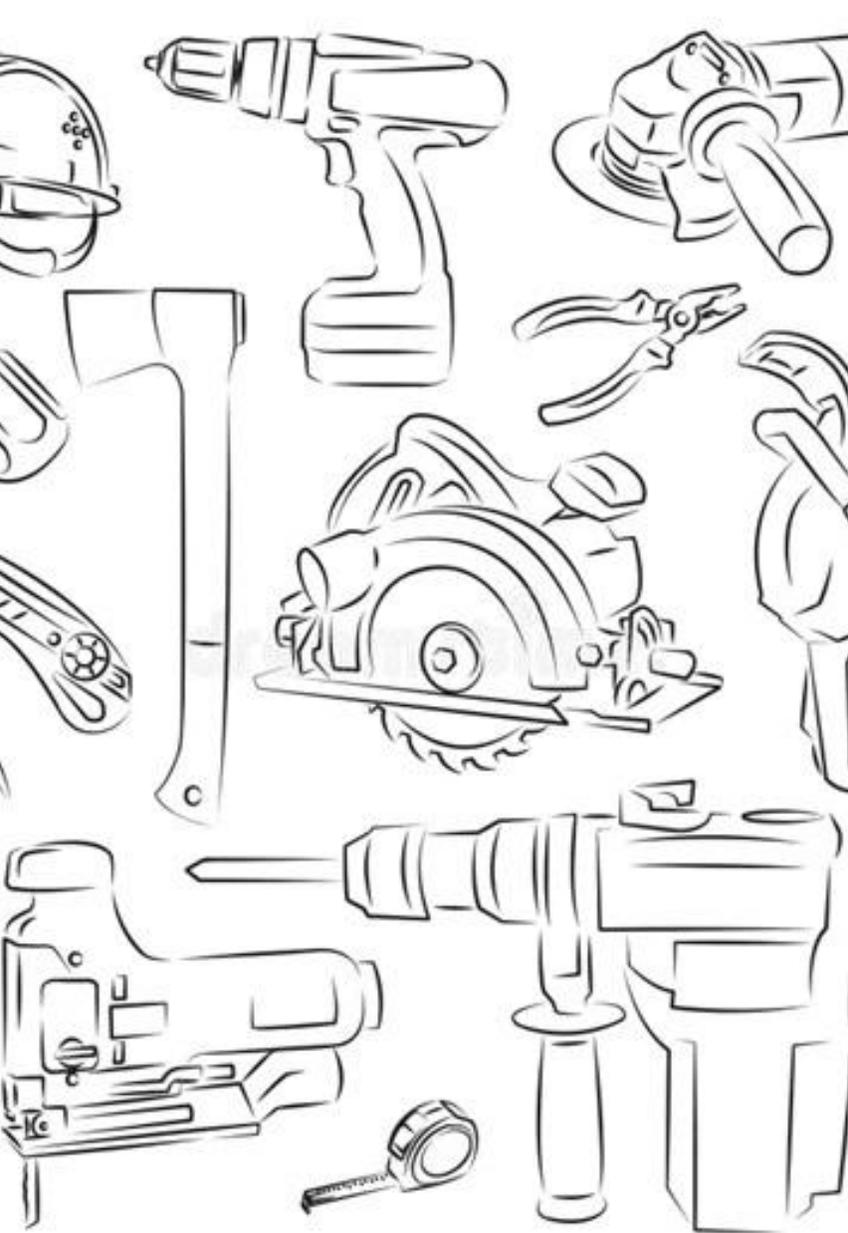
### Results

- **Framework to operationalize solutions involving time series data and other relational data sets.**
- **Internal development of analytical and predictive models that will scale to multiple sites.**
- **Potential for 3% truck efficiency and 1% operator lower costs with improved asset health and lower carbon emissions.**

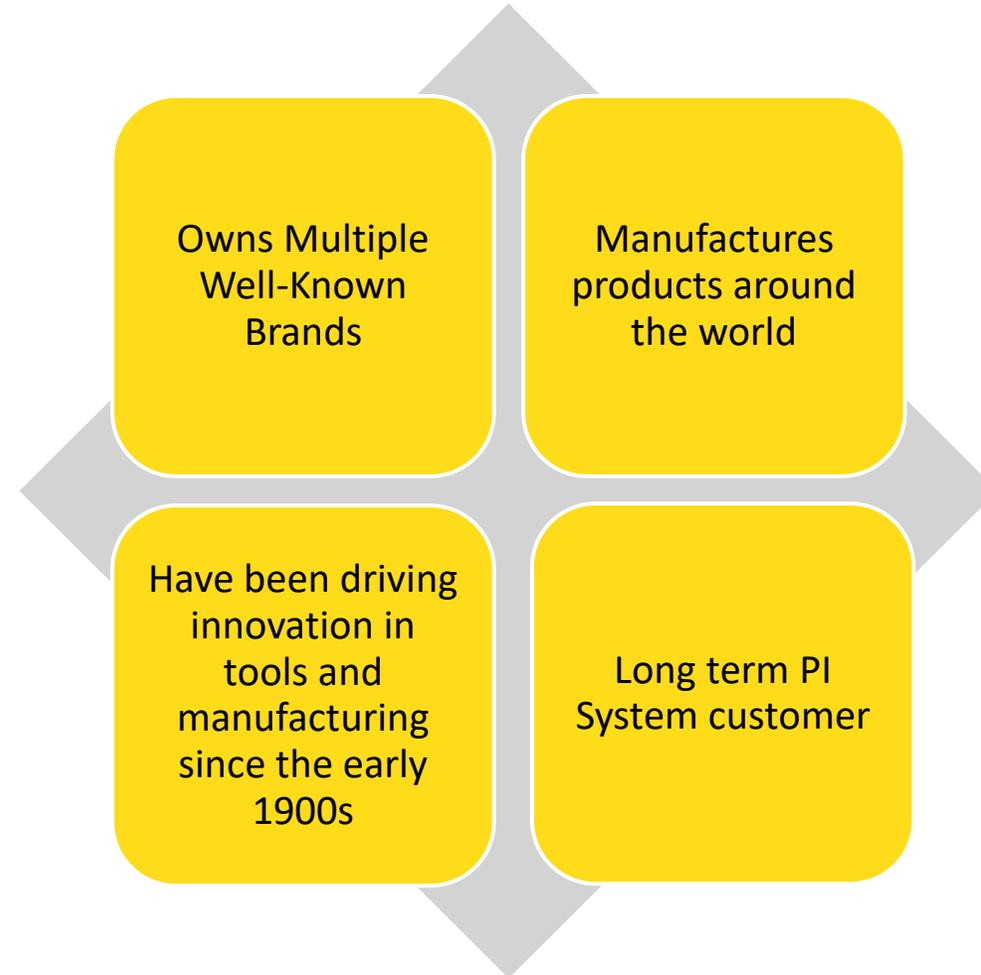


“ Leveraging *CONNECT* data services to seamlessly query time series data in the *Databricks* environment will open the door to many use cases where disparate data sets exist ”

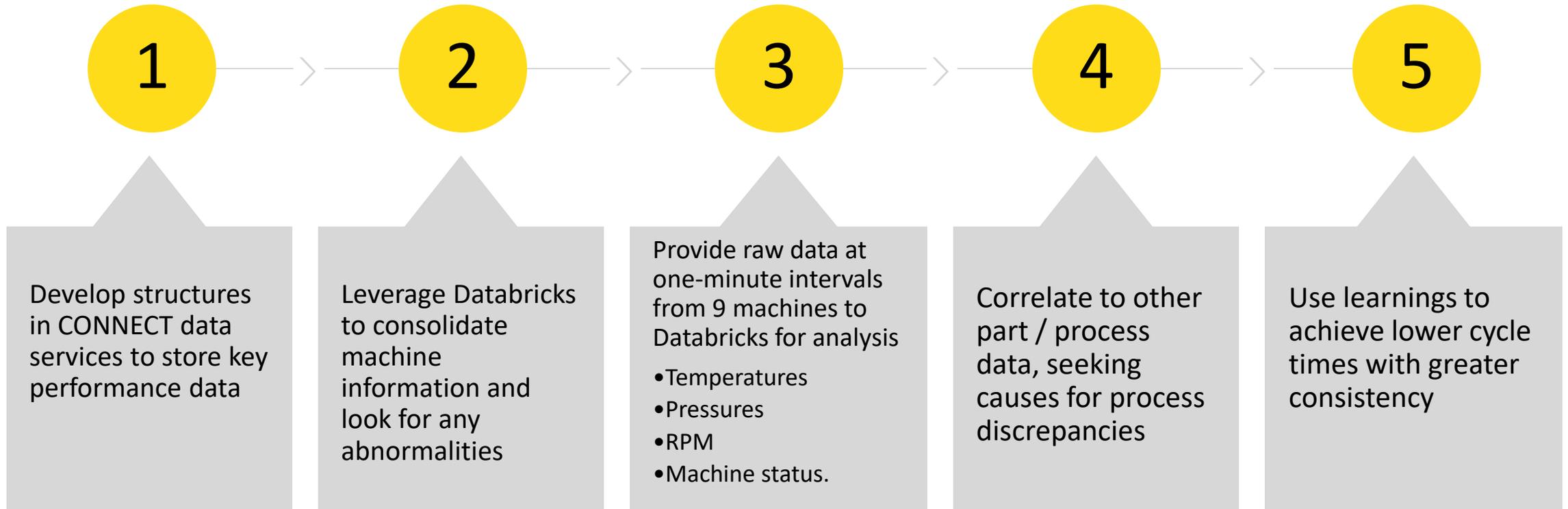
# Leading power tool manufacturer



# Multinational Tool Manufacturer



# Project Overview



# Business Challenge

Reduce effort and IT services necessary to drive data integration between historical data storage and Databricks. Intended outcomes:



Improvement of cycle time for low performing equipment by **25%**



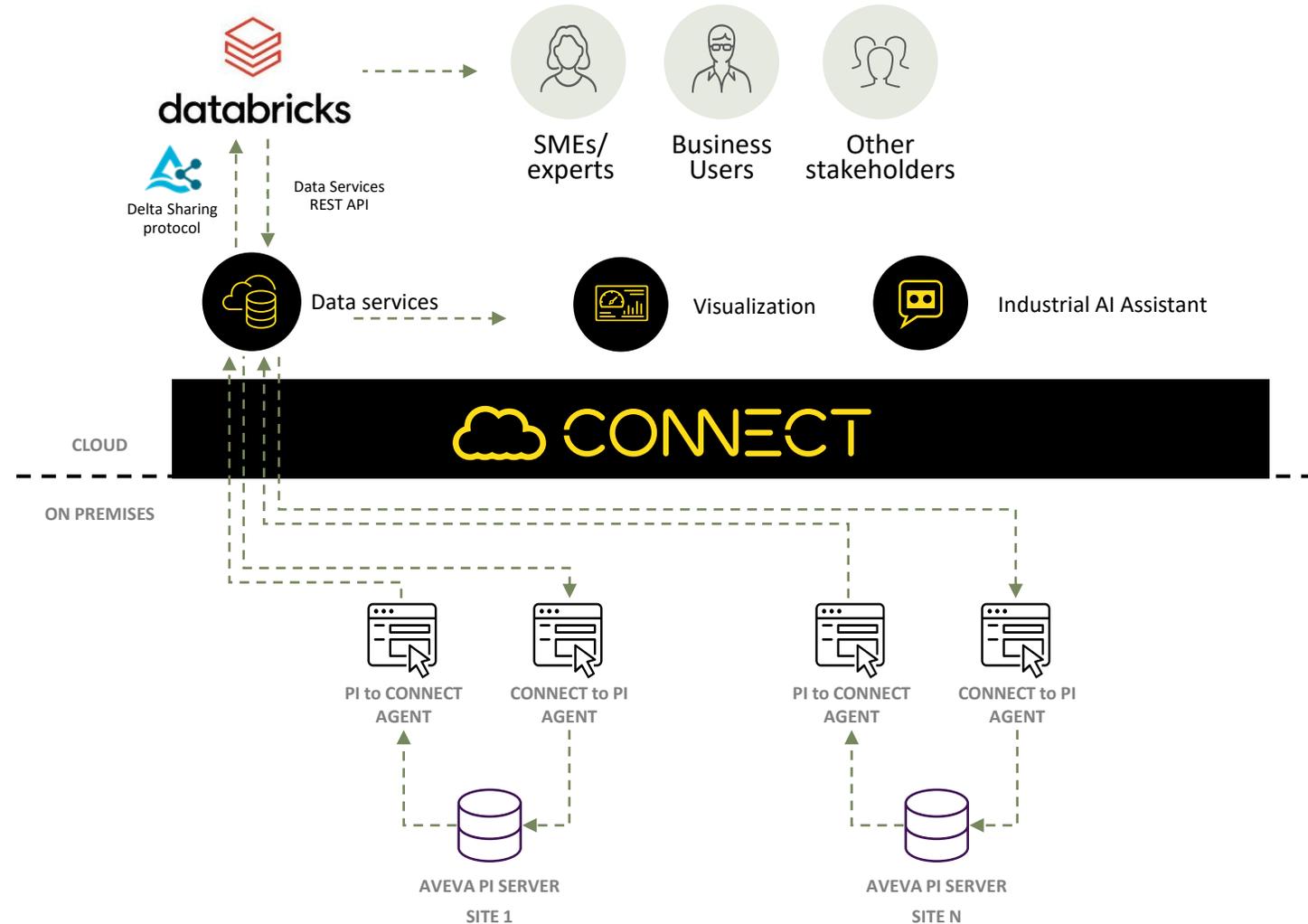
Improvement of cycle time repeatability to **+/- 5%** from machine to machine



Reduction of time needed to analyze and diagnose machine problems by **50%**

# Lighthouse Architecture & Integration Benefits

- Fast Integration – 3 weeks
  - Data views
  - Virtual table
  - Analysis in Databricks
  
- No custom data pipeline necessary



# Consolidating and sharing machine data with Databricks for troubleshooting and optimization

## Challenge

- Securely stream near-real-time equipment data from PI System to CONNECT and Databricks, reducing cycle time by 25% on underperforming equipment and improving repeatability to  $\pm 5\%$  across machines.
- Multiple factors influence the coating process, with data stored in PI systems and other sources essential for analytics. A central repository is needed for integration.

## Solution

- CONNECT is used as a central cloud-based repository for process data. It provides a source of this data to Databricks and CONNECT visualization services.

## Results

- **CONNECT serves as a central hub for process data, delivering it to Databricks for integration with other system data, reducing data curation time by 50%.**
- **Framework for multiple use cases and multiple data sources.**



# Q&A

CONNECT



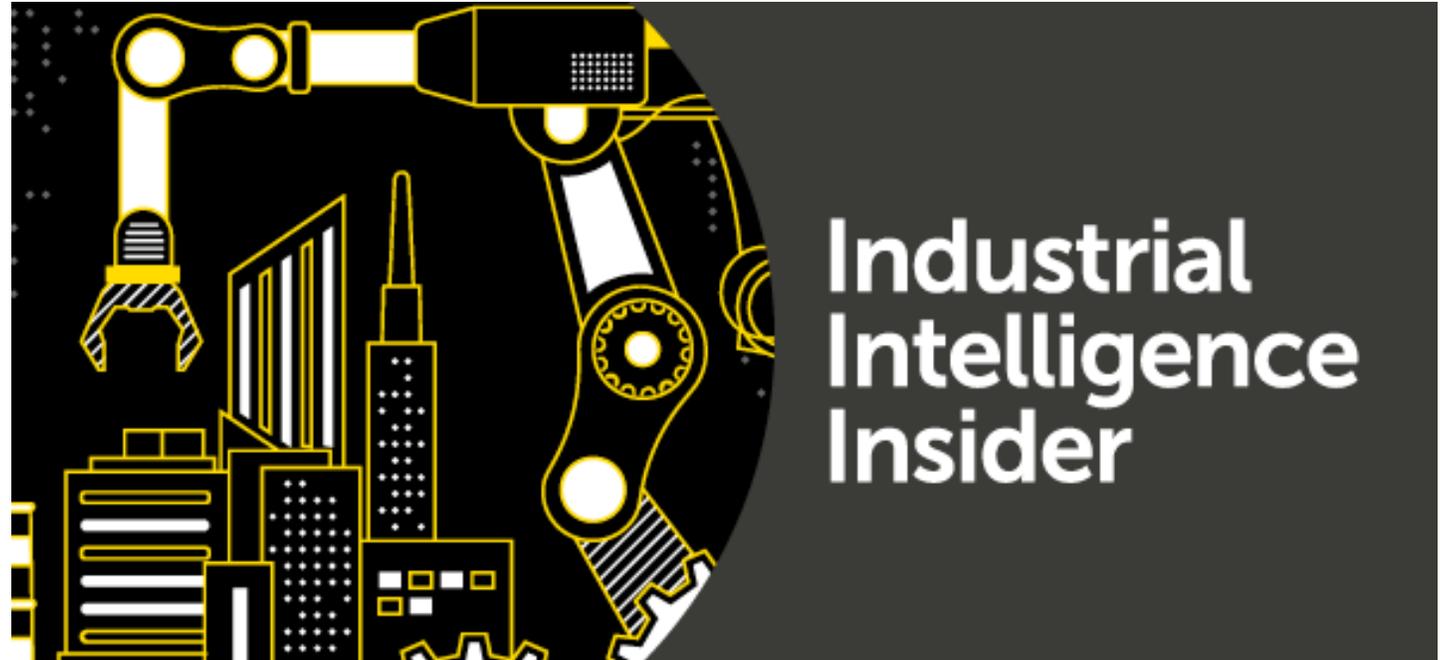
**databricks**

# New! Industrial Intelligence Insider Newsletter

Stay up to date with the latest product news on AVEVA and CONNECT

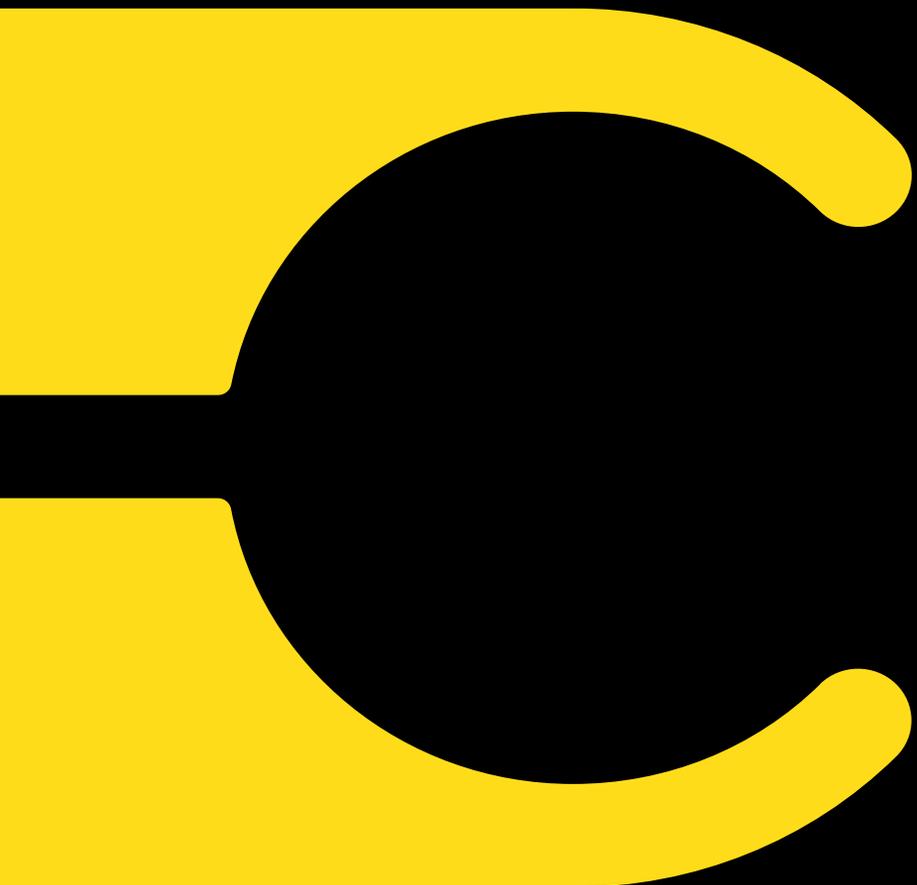
Each issue includes:

- Key industry insights & trends
- Product release updates
- Event details
- And more!



This presentation may include predictions, estimates, intentions, beliefs and other statements that are or may be construed as being forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could result in actual outcomes differing materially from those projected in these statements. No statement contained herein constitutes a commitment by AVEVA to perform any particular action or to deliver any particular product or product features. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation.

The Company shall not be obliged to disclose any revision to these forward-looking statements to reflect events or circumstances occurring after the date on which they are made or to reflect the occurrence of future events.



 [linkedin.com/company/aveva](https://www.linkedin.com/company/aveva)

 [@avevagroup](https://twitter.com/avevagroup)

#### 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)