
AVEVAWORLD

APRIL 9, 2025

CONNECT & Databricks: Unifying IT & OT data for smarter, sustainable operations

Presented by:

Damien Rouge, Technical Product Manager

Sam Pride, CONNECT Solution Consultant

Damien Rouge

Senior Technical Product Manager

AVEVA

Damien leads the integration of cloud data platforms such as Databricks, Microsoft Fabric, and Snowflake within the CONNECT Data Services portfolio. He is also responsible for developing analytics solutions, including AVEVA BI Gateway.

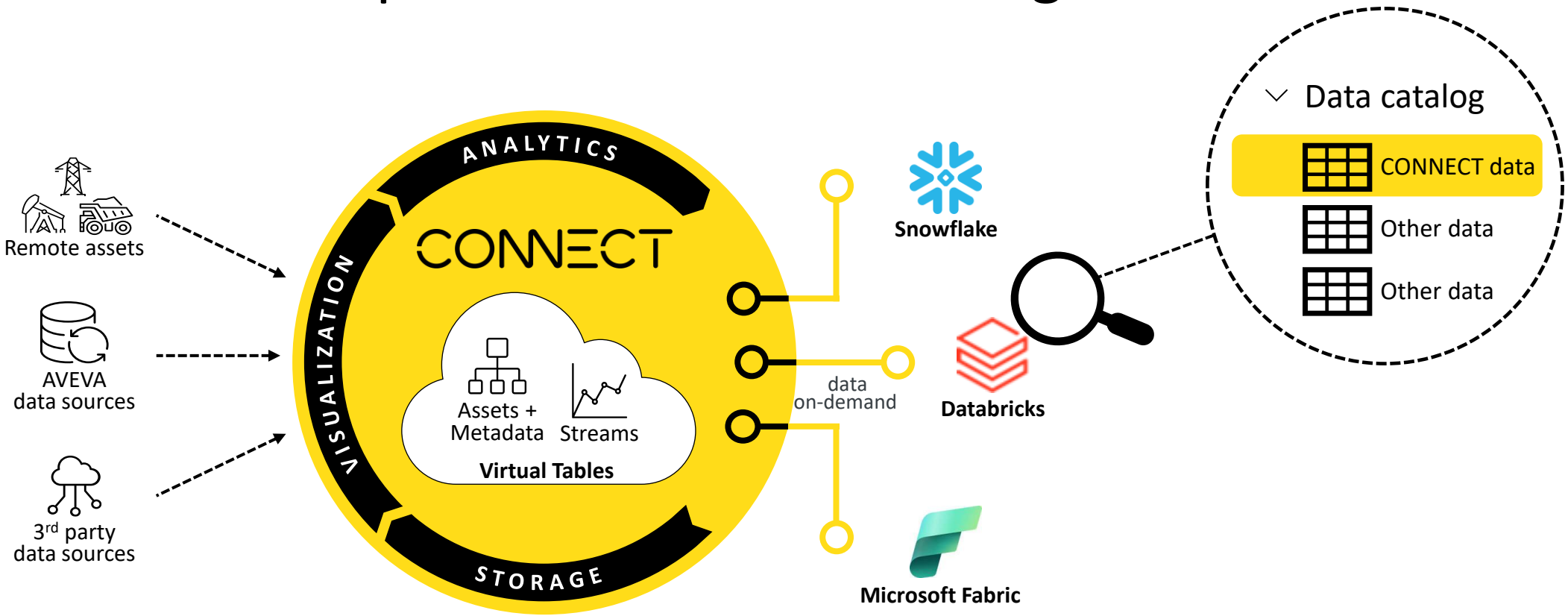
Sam Pride

CONNECT Solution Consultant

AVEVA

Sam is a member of the CONNECT Incubation Team, helping customers implement use cases on the CONNECT platform. He has been working with Operational Data for over 18 years with a key focus on the PI System and cloud technologies.

Enable the enterprise with seamless integration



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

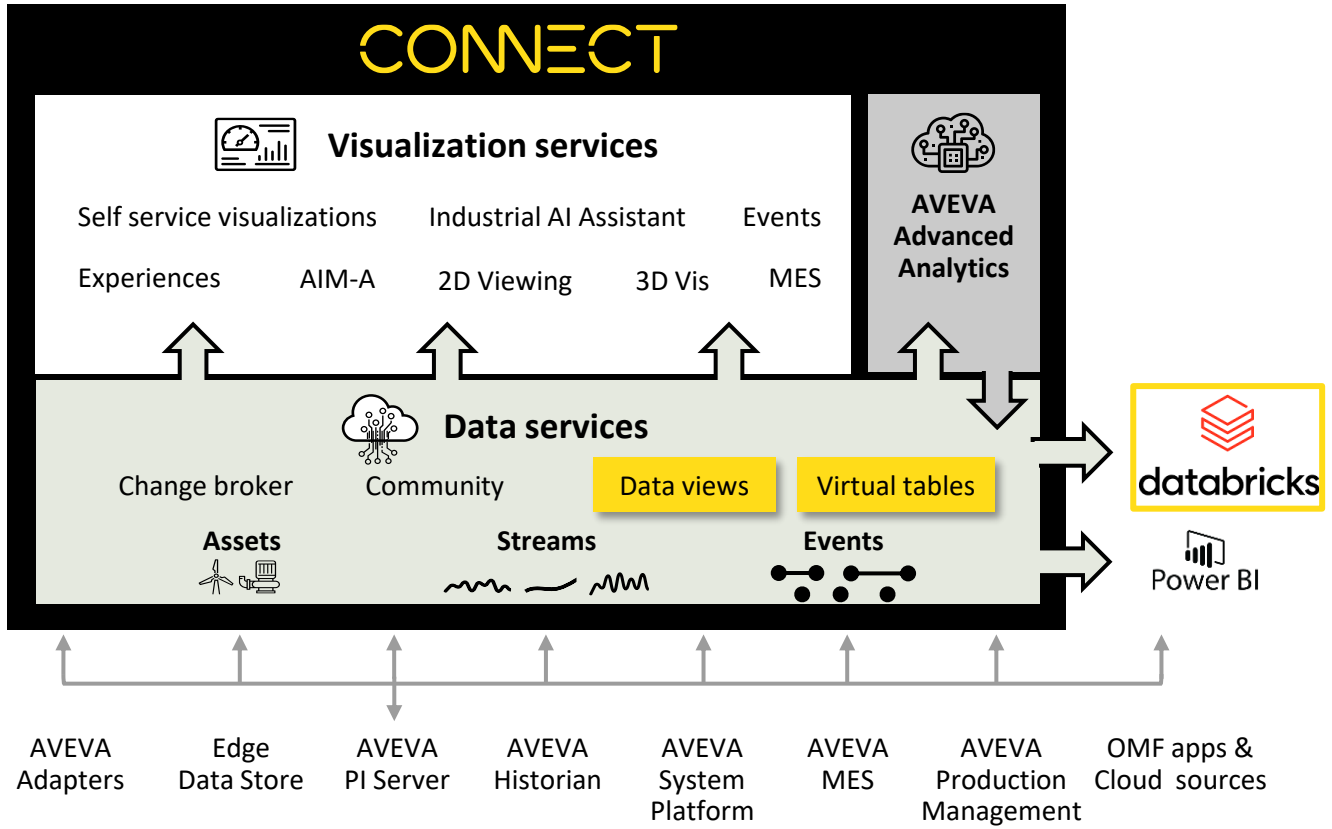
NATIVE CONTEXTUALIZATION
Save interpretation time with ready-to-consume data

STORAGE EFFICIENCY
Reduce costs by eliminating duplicated datasets

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

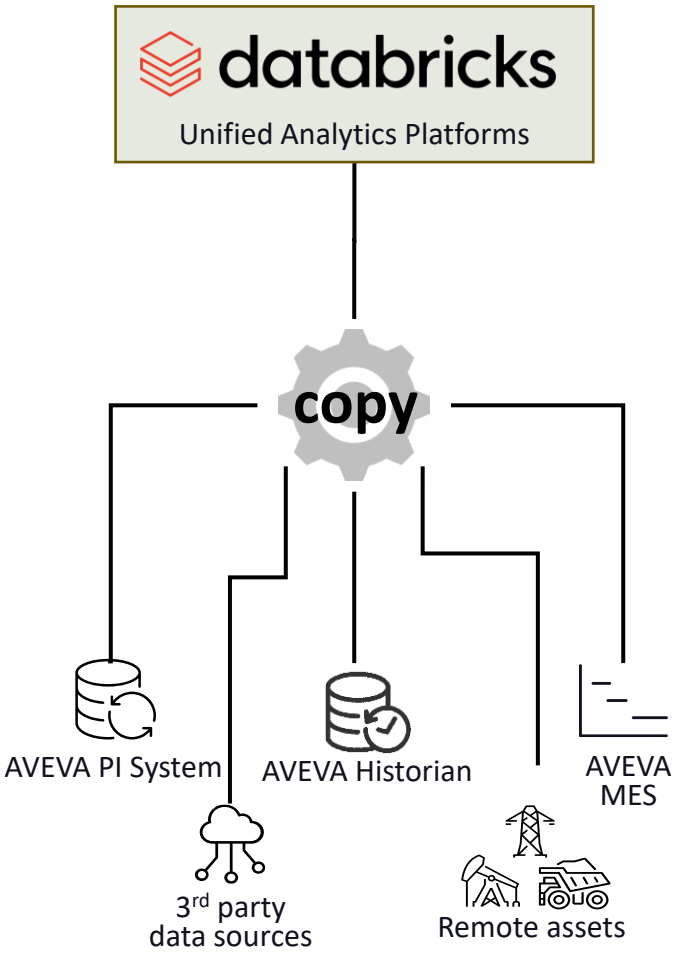
CONNECT virtual tables enable no-copy integration

Remote monitoring | Data science & AI/ML platforms | Applications & analysis tools | Enterprise visualization | Reporting & dashboards | Production performance | Data sharing | Custom & partner applications | Analytics platform integrations



Live industrial data for data science

Fragmented Solutions



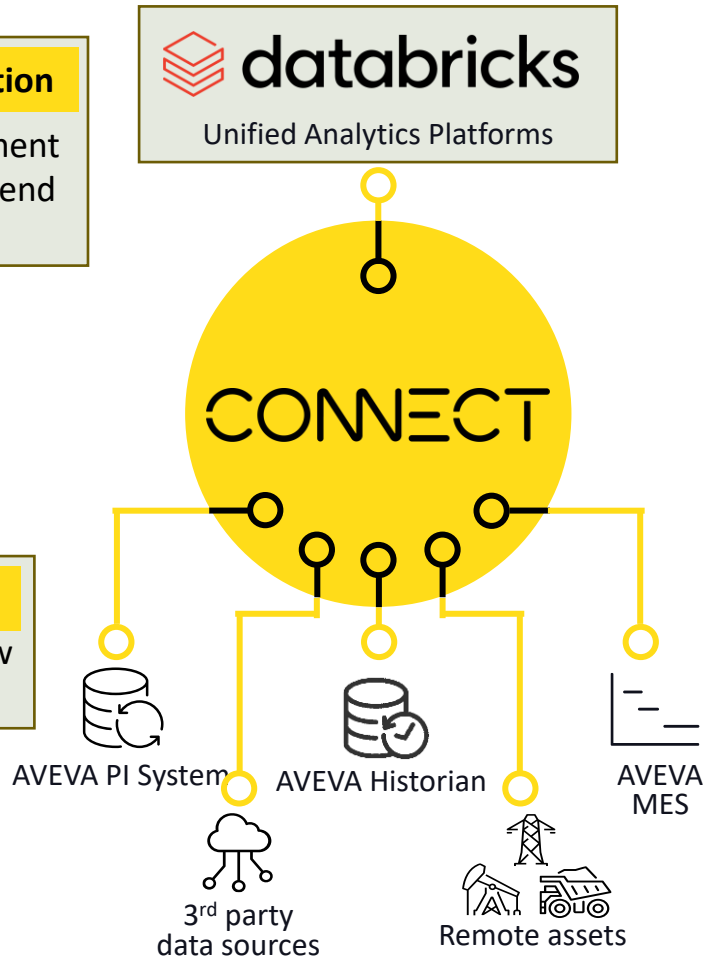
Out-of-the-box integration

- No custom development
- No maintenance by end customer

Easily scales

to support new use cases

Seamless Integration



Aggregated industrial data

- Maintain and augment contextualization of data across sites and sources
- Ensure accurate capture of updates and changes to the system of record
- Results and insights return to OT environments

Native integration

with operations data sources

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

Point-and-click integration workflow

CONNECT

Customer's Databricks

1. **Create Virtual Table**
   - Select the Data View
2. **Configure Virtual Table**
   - Set the **Retrieval Interval**
     - Time-Fixed Window
     - Time-Extending Window
   - Set the **Retrieval Mode**
   - Set the **Refresh Interval**
3. **Create Share**
   - Get Metastore ID of the Customer Databricks Workspace
4. **Summary**
   - Review before saving

Delta Lake with **UniForm**

Metadata

Parquet

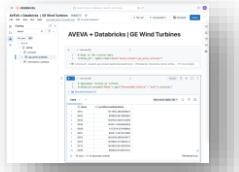
Microsoft Azure

databricks

Delta Sharing:
Open, live data sharing,
no data replication

Unity Catalog

Zero-copy Data Access



Data Scientist

Data Analyst

DEMO: VIRTUAL TABLES UNLEASHED

Powering Databricks with CONNECT data services

Lori

Data Scientist

Goal: Design and implement an unsupervised anomaly detection model for spray dryer asset type.

Responsibilities: Use advanced statistical methods and machine learning to create predictive models.

Skills: Strong foundation in machine learning, Python or R

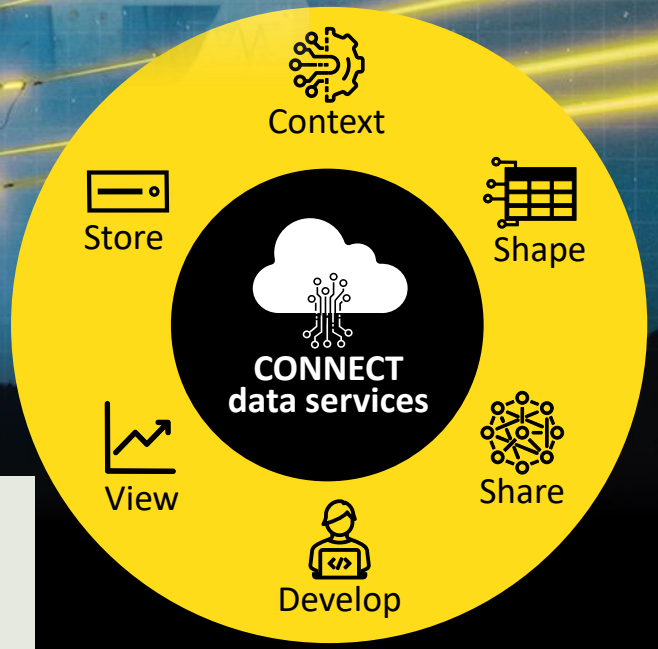
Josh

Data Architect

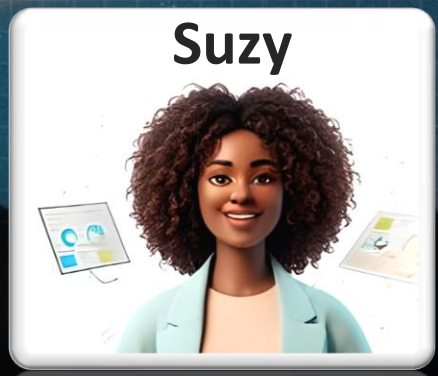
Goal: Enable CONNECT data services within Unified Analytics Platform

Responsibilities: Oversee the design and structure of databases and data platforms. Works on data integration, data flow management, and system optimization

Skills: Knowledge of cloud architectures, and industrial systems. Understanding of compliance and governance standards



Suzy



Data Analyst

Goal: Design and implement KPI collection across regions and business units, ensuring proper KPI usage and interpretation.

Responsibilities: Analyze data to provide insights that can improve operational efficiency, production quality, or predictive maintenance in industrial settings.

Skills: Expertise in data visualization tools (Power BI, Tableau), statistical analysis, and familiarity with industrial KPIs (Key Performance Indicators)

Demo: Use case scenarios

Operational Efficiency and KPI Monitoring

- Suzy uses CONNECT data and dashboards (in Databricks and Tableau) to analyze key metrics such as vibration, temperature, and pressure.
- She designs KPIs focused on optimizing the spray dryer's operational efficiency and energy consumption.

Anomaly Detection in Industrial Processes

- Lori develops a machine learning notebook using the Isolation Forest algorithm to detect anomalies in spray dryer operations.
- This helps identify unusual behavior and trigger timely alerts for corrective actions

Data Integration and Virtualization

- Josh's role illustrates how to connect diverse data sources—from operational systems to Databricks—by creating virtual tables, sharing data through Delta Sharing, and ensuring the data is clean, consistent, and accessible for analysis.

Home
Data Management
Data Collection
Visualization
Analytics
Security
Developer Tools
Support
COLLAPSE

Assets
Search for Assets
sd
Add Asset

Filter facets

Status
- Good
- Warning
- Bad
- Unknown

Asset Type
- SprayDryer
- Asset_PSR

Spray Dryer SD01
Spray - Dryer

Lori

Suzy

Lori and **Suzy** are independently analyzing a Spray Dryer asset using CONNECT trend data.

Lori is focused on visual metric correlation to develop an unsupervised anomaly detection model,

while **Suzy** is designing energy KPIs to optimize the efficiency of the spray dryer.

They are requesting **Josh**'s assistance to enable this dataset as a **VirtualTable** within the company's Databricks workspace

Items per page: 50
1 – 1 of 1

Demo: Use case scenarios

Validating New Asset Data Integration

- Suzy informs Josh about a new deployed spray dryer and requests verification of its data connectivity and virtualization in Databricks.
- Josh confirms asset creation and data historization and ensures the existing virtual table is correctly sharing data.

Training AI with Historical Reference Data

- Lori requests past dry run data for AI model training.
- Josh loads it into CONNECT, where it’s automatically virtualized and verified in Databricks.

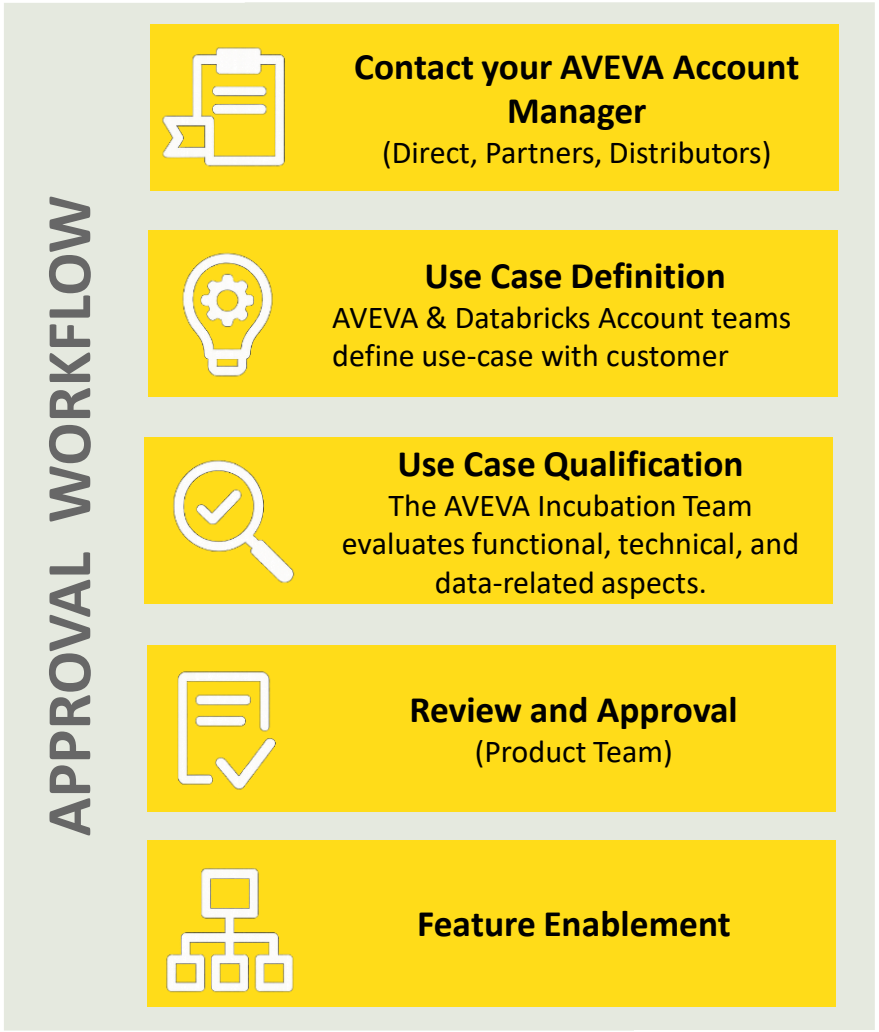
Connectivity and data loss

- Suzie identified missing data from a plant while implementing new performance KPIs across global sites.
- Josh confirmed a network outage at the plant, coordinated resolution with local IT, and ensured data was backfilled and automatically virtualized.

Virtual Table - New Asset Data Integration

Use Case Scenario

Getting started now: access the Limited Availability release



Limited Availability Release

- Secure integration without data copy via delta sharing
- No code, simple workflows to define and share datasets
- Automatic data updates without user involvement
- Data change scenarios handled automatically:
  - Late-arriving and out-of-order data
  - Stream and asset additions

Virtual Tables Release Roadmap

Limited Availability Release

- 10 virtual tables per tenant
- Initial throughput restrictions
- Restricted refresh interval
- Some data change scenarios not handled automatically
  - Manual refresh option available

General Availability Release

- Increased scale and performance
- Automated handling of additional data change scenarios
- More visibility into virtual table status and update operations

Future

- Additional targeted platforms
  - Microsoft Fabric & Snowflake
- Support for events in data views & virtual tables
- Support for community data in virtual tables
- Bi-directional data flow

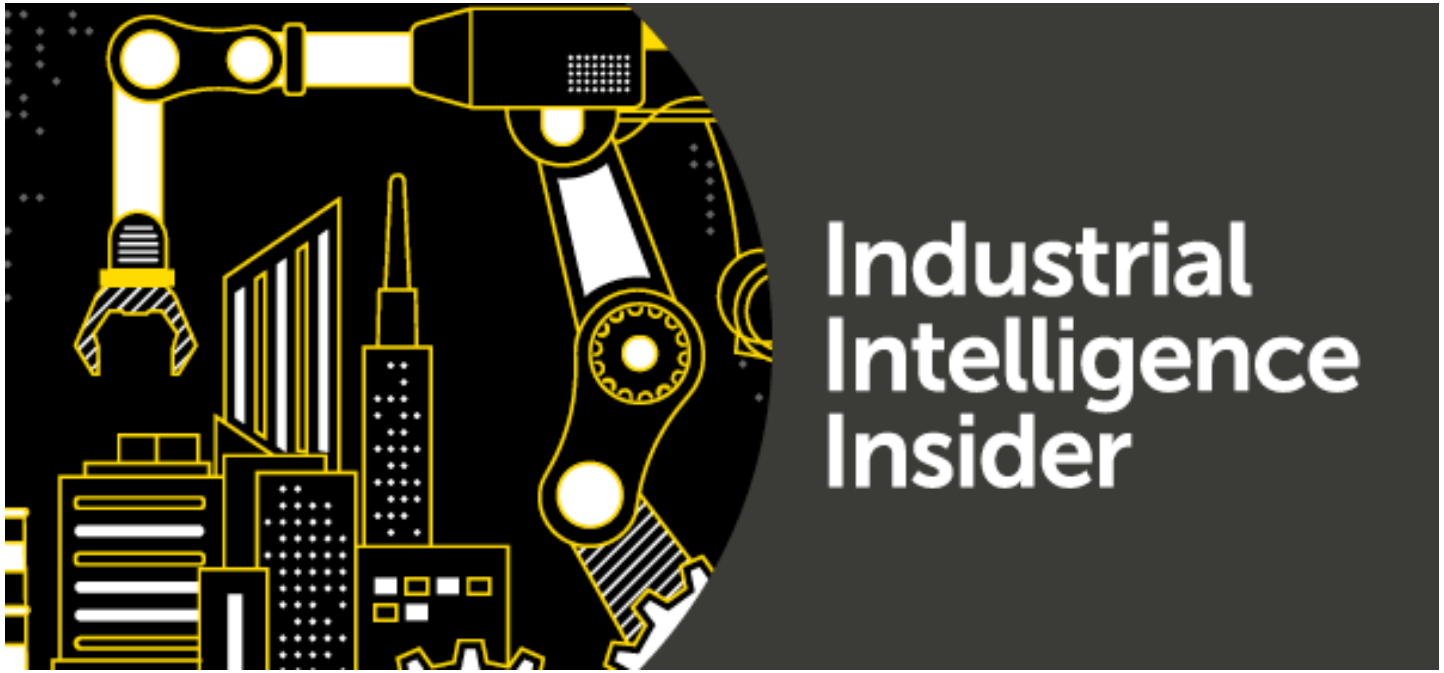
** Dates and functionality are subject to change

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!



Check out the **Innovation Zone** – on Level 1

- Demos booths
- Food court / seating
- Sponsors / exhibitors
- Tours, theaters, games

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.

Thank you!

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