



AVEVAWORLD
PARIS

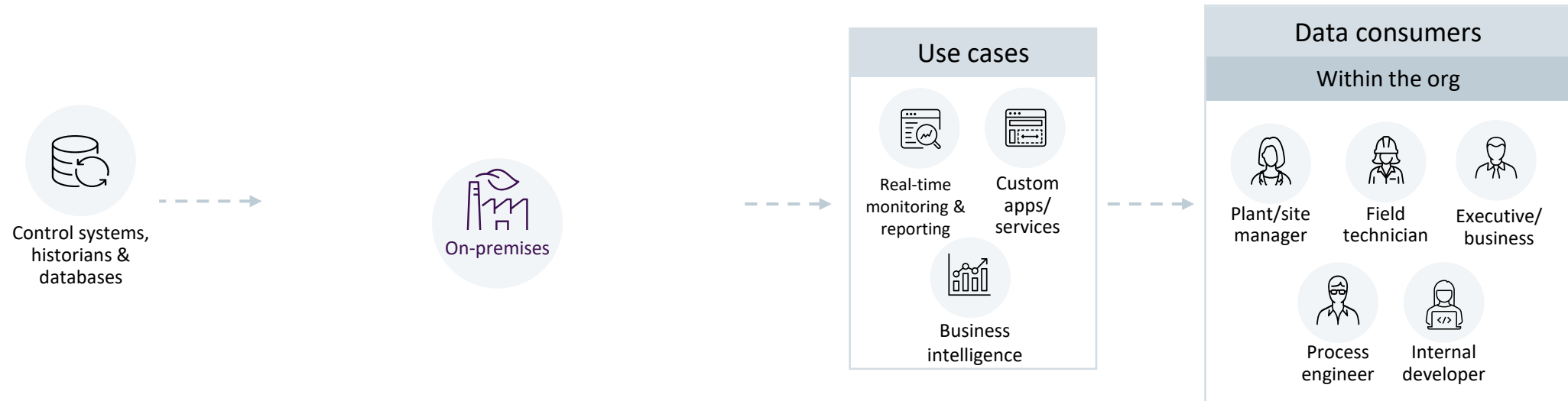
OCTOBER 2024

Roadmap – AVEVA™ PI System™ and AVEVA™ PI Data Infrastructure

Mana Afshari, PhD – Director, Portfolio Management

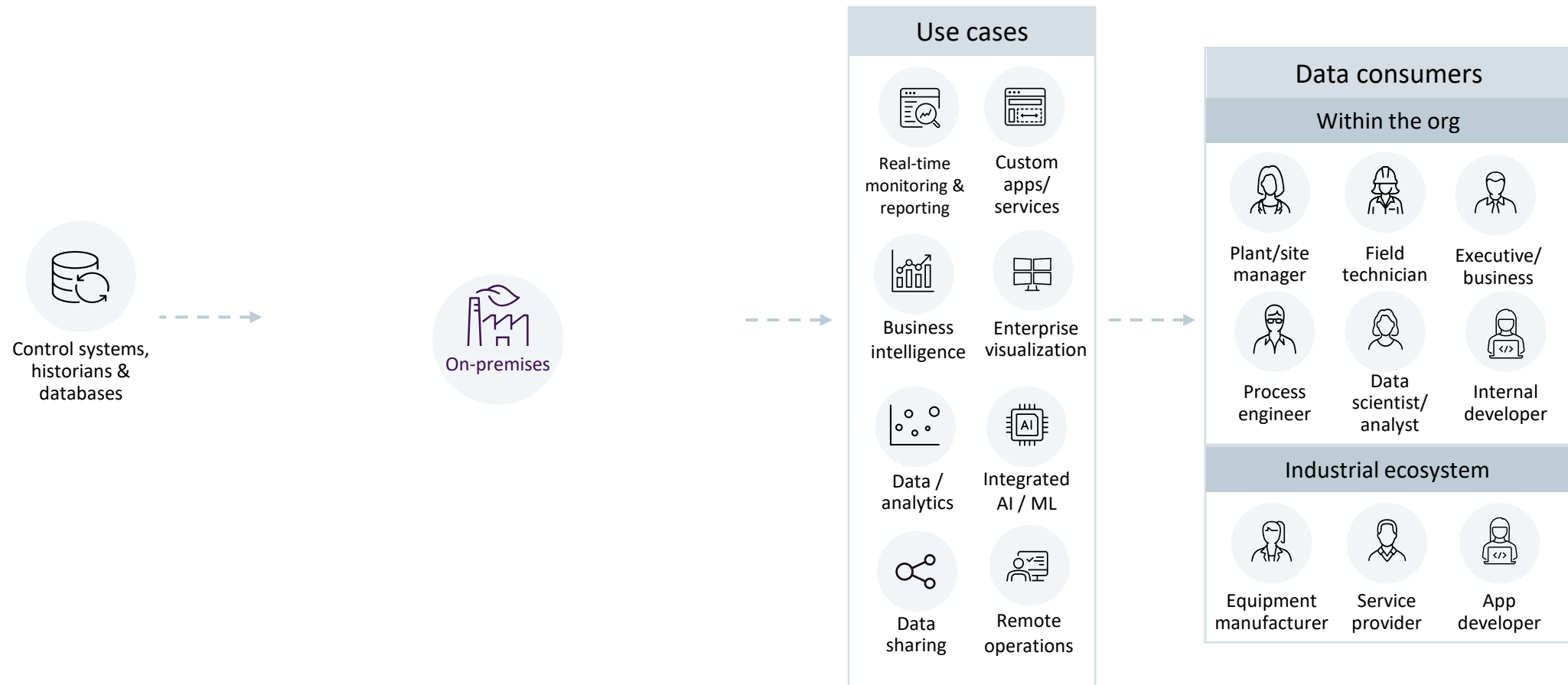
Supporting evolving data needs

Flexibility needed in today's connected, data-driven industry



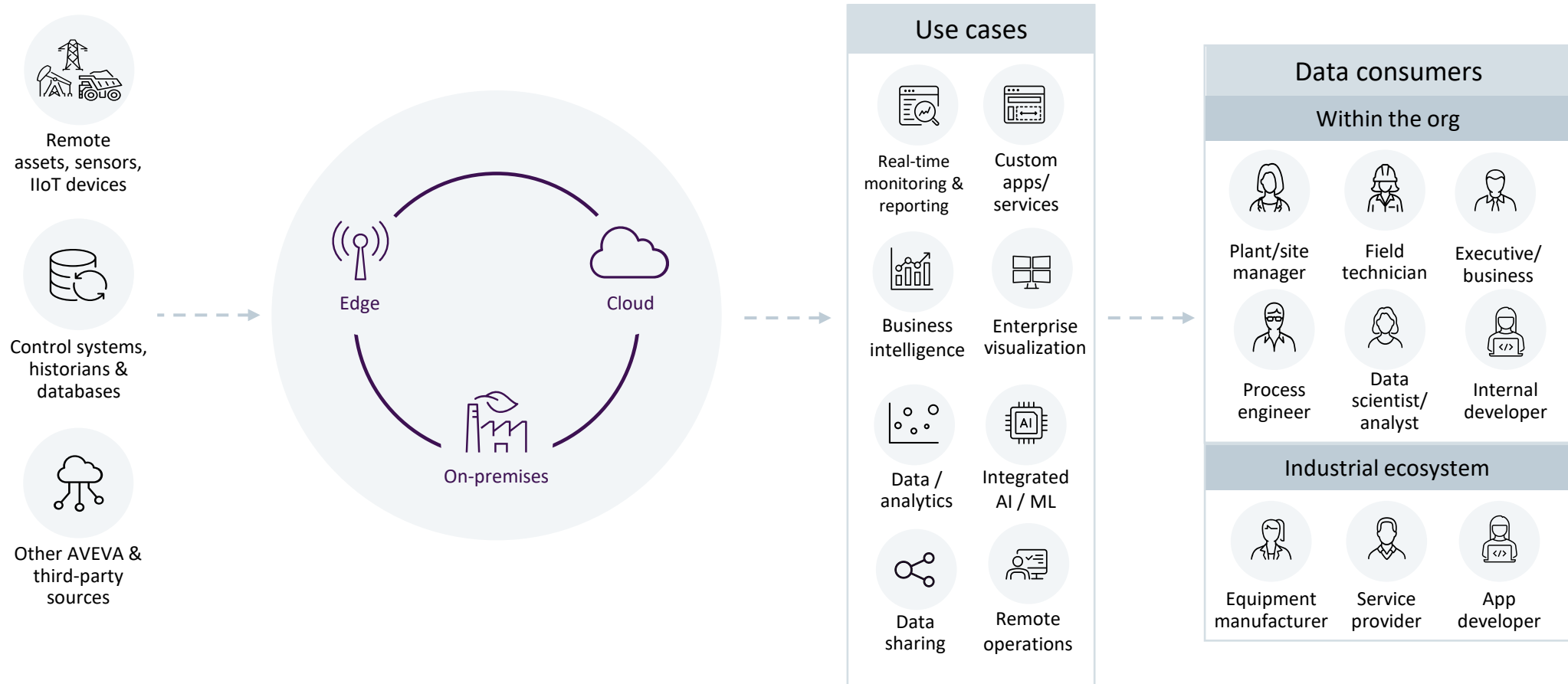
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AVEVA PI Data Infrastructure

Fully integrated hybrid

AVEVA Edge Data Store, AVEVA PI Server, CONNECT data services
AVEVA Adapters, PI Connectors, PI Interfaces, PI to CONNECT,
CONNECT to PI

Investment protection

Investing in the on-premises PI System and complementing it with
cloud and edge

Hybrid value delivered over time

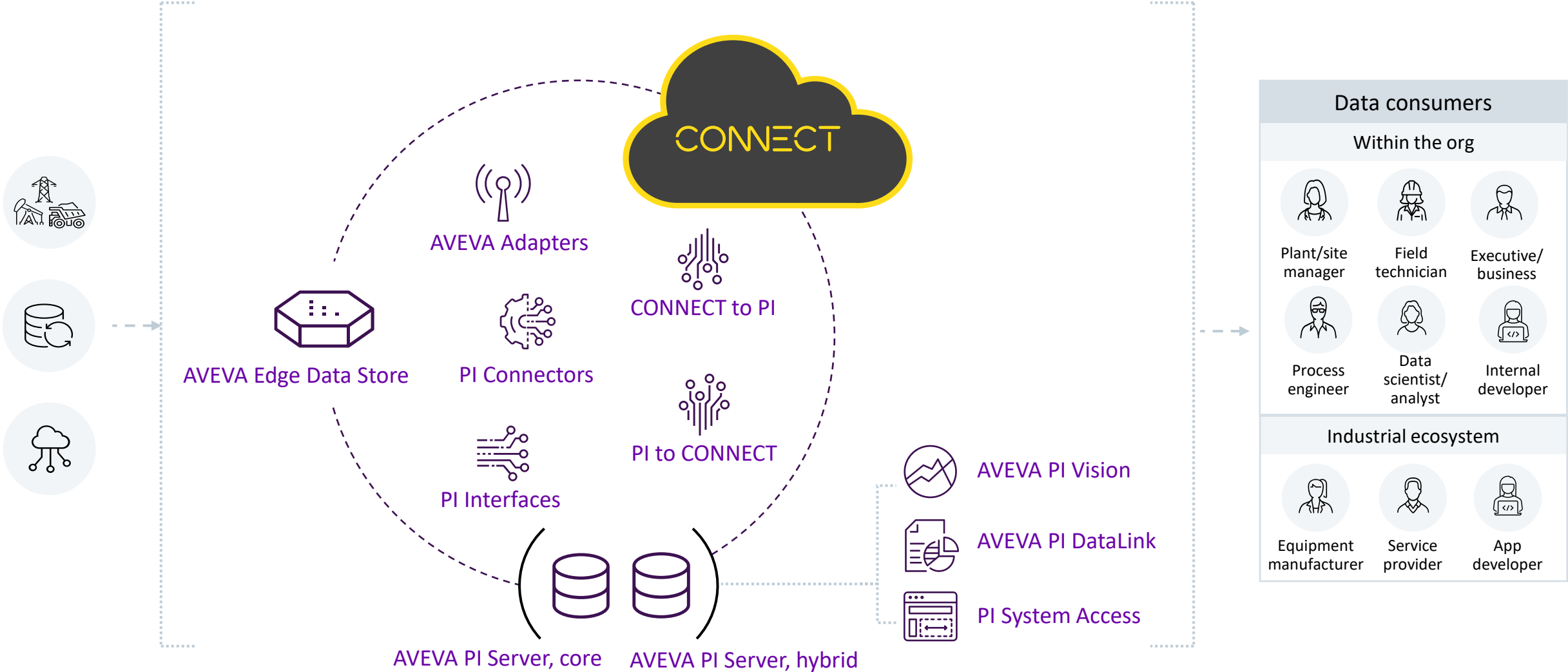
Leveraging CONNECT

Enterprise-level features

More flexibility for scaling data usage in large, multi-site deployments

New aggregate tag licensing option

Extending the on-premises value with a hybrid offering



Open and neutral, providing rich insights for your unified industrial ecosystem

Service & usage management

Unified experience to manage cloud and on-prem apps



Modeling & analytics

Combine existing data with AI for faster and smarter decisions



CONNECT

Industrial intelligence platform

Data services

Aggregate, contextualize, and share real-time industrial data



Application development

Expand your ecosystem with solutions that bring added value

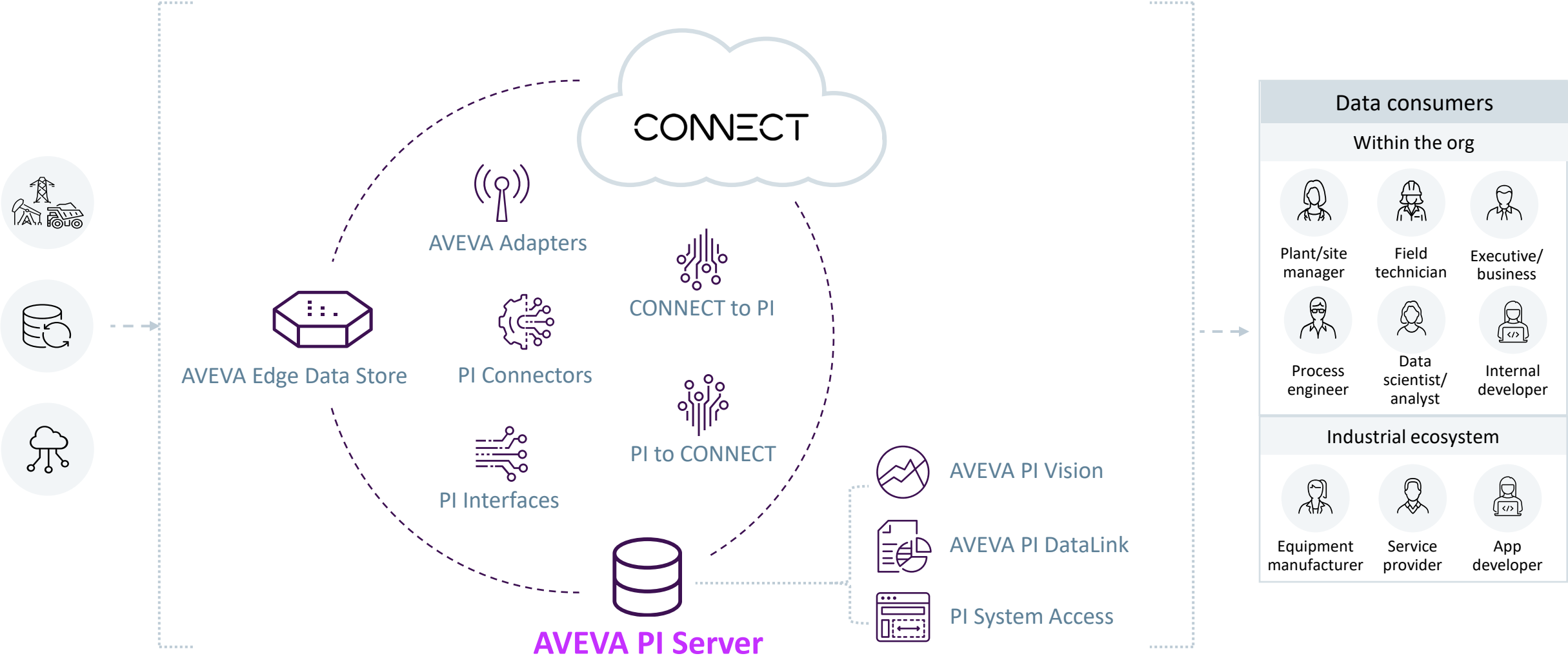


Visualization services

Visualize industrial information with customizable dashboards



Extending the on-premises value with a hybrid offering





Enhanced asset analytics scalability

Make larger scale recalculations with less performance impact

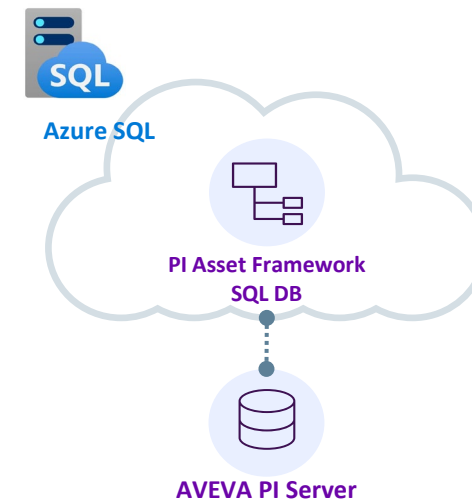
More quickly serve consumers after an outage or large-scale changes

- Out-of-order event handling improvements enable large writes and reads at the same time
- PI Update Manager enhancements increase the ability of PI Server's data archive to serve consumers of data
- More throughput efficiencies for PI Server's data archive

Host PI AF SQL database on Azure SQL DB

Ease cloud migration and offload AF SQL admin tasks to Microsoft Azure or AWS

Lower costs from IT overhead and on-demand usage with more automation



Additional features for PI Server

In development



AF SDK support for latest .NET implementation

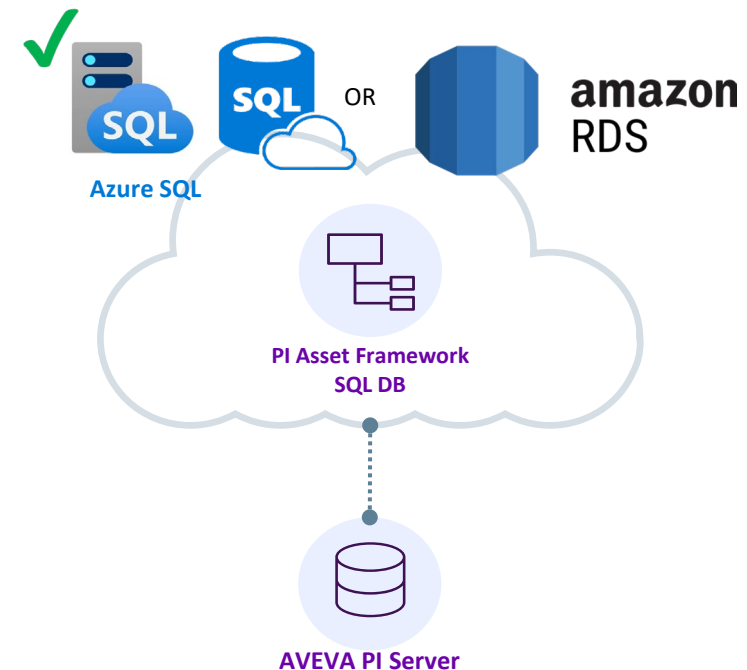
Build custom PI System applications on modern technology stack

Decrease development time and platform dependencies

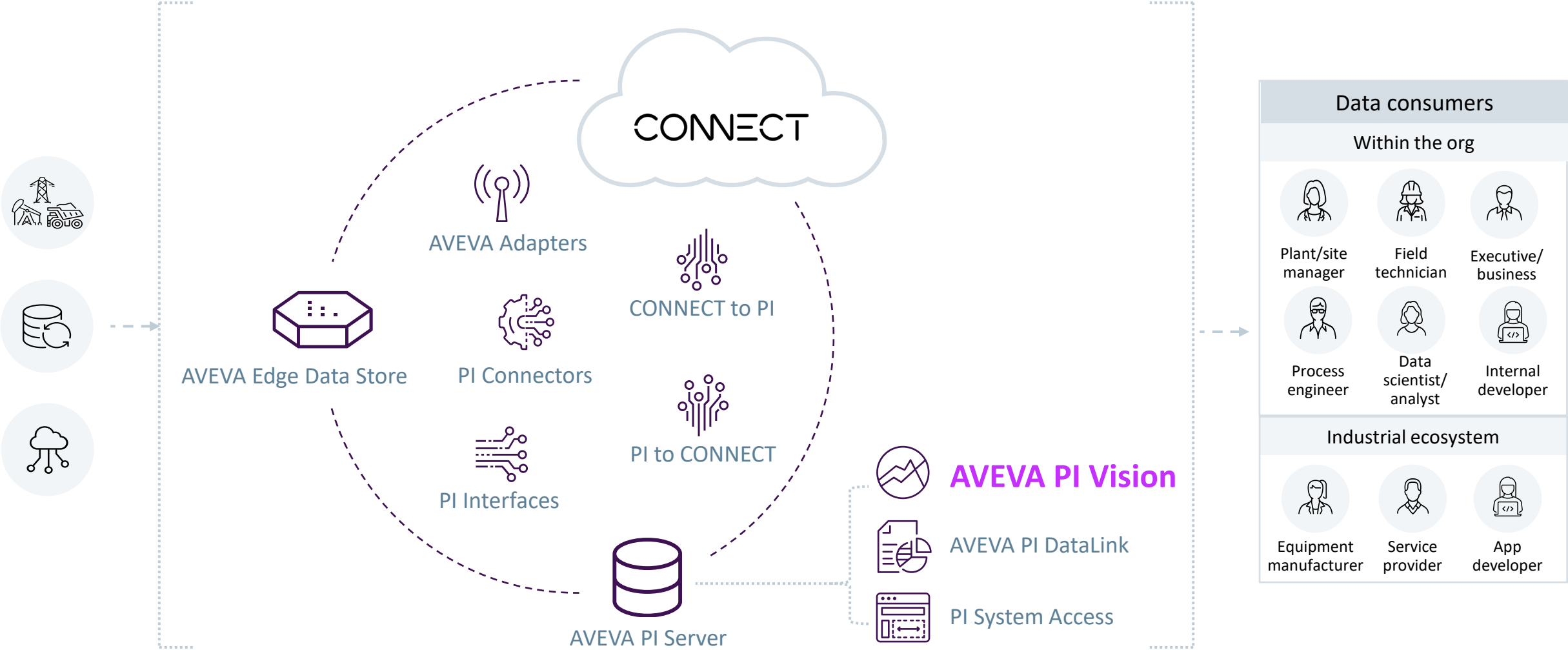
Increase applications' life cycle, performance, and compliance

- AF SDK support for .NET 8.0, latest version of the cross-platform, open-source framework optimized for modern applications and developer workflows

Host PI AF SQL database on Azure Managed SQL Instance, or Amazon RDS

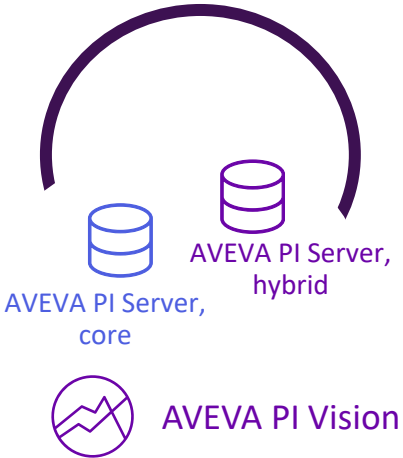


Extending the on-premises value with a hybrid offering



AVEVA™ PI Vision™

The fastest, easiest way to visualize AVEVA PI Server data



In development

Claims-based authentication
(admin site & display utility)
Advanced Tag Search

2023 SP1

2023

Claims-based authentication (main site)

2022

Enhanced events analysis & display standardization

2021

Asset based calculations & offline display management

2020

Tag based calculations & display usage monitoring

2024

Process monitoring and display management capabilities

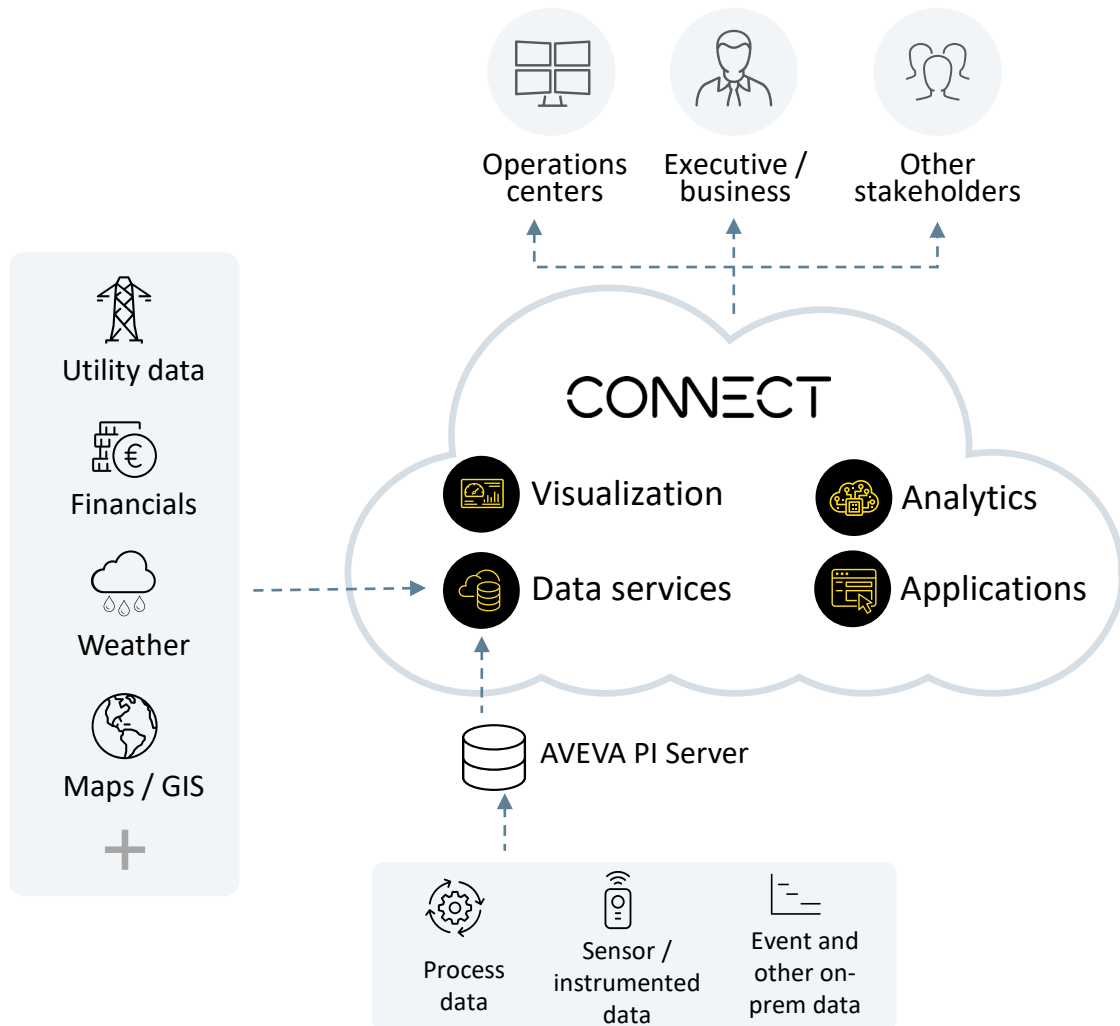
- New time-series table symbol
- Configurable font and font size on all PI Vision symbols
- Ability to bulk edit multiple symbols on a display
- Improved display sorting and tabular view of displays
- Granular folder and display permissions
- Additional multi-state capabilities

2025

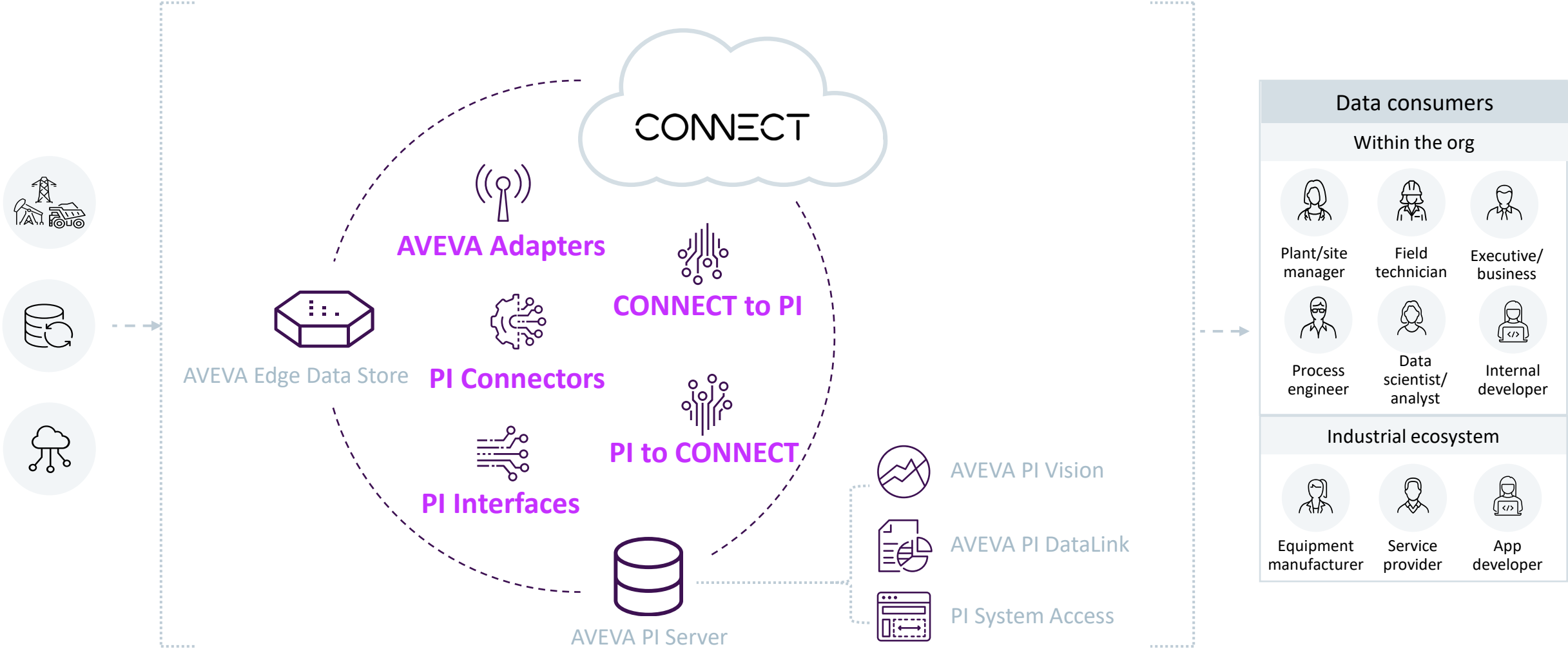
Enterprise visualization – CONNECT visualization



Visualize industrial data using self-service and pre-defined dashboards



Extending the on-premises value with a hybrid offering



Data connectivity



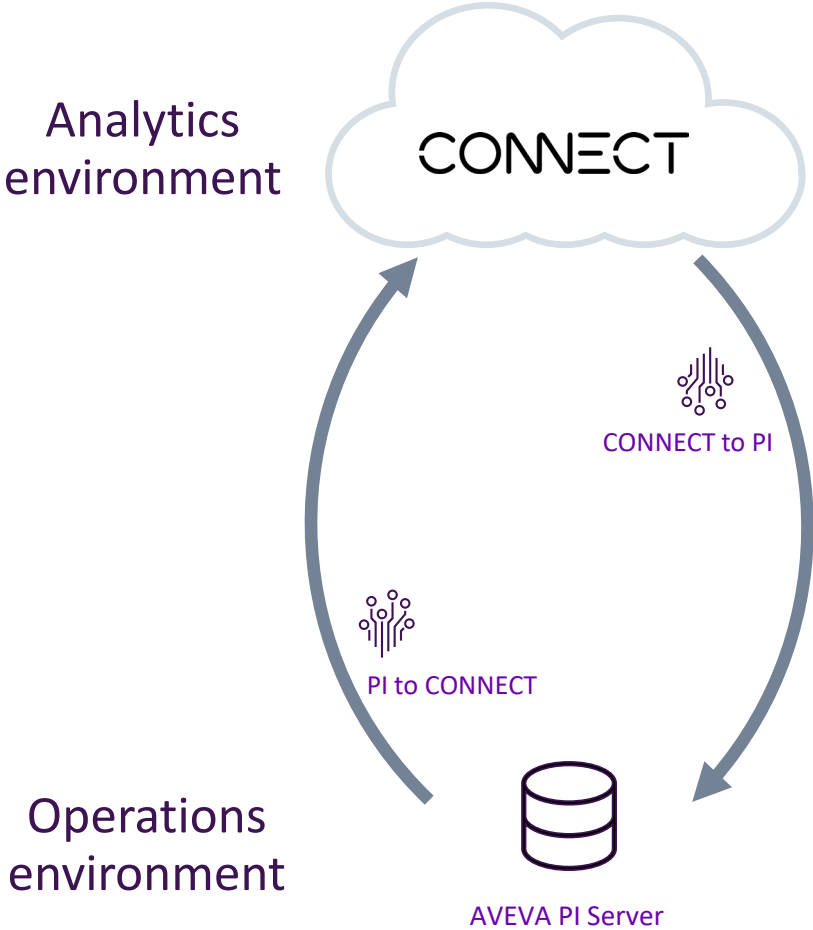
Investing in products that fuel your data infrastructure

Technology	Updated Features	Recently Released	Coming Soon
AVEVA Adapters	<ul style="list-style-type: none">• Failover• Edge Modules• Greater Throughput• Enhanced authentication	<ul style="list-style-type: none">• OPC UA (Polling)• DNP3 (TLS 1.2 and 1.3)• BACnet, Modbus TCP	<ul style="list-style-type: none">• OPC UA (Alarms & Conditions)• SDF, RDBMS, AEH, MQTT
PI Connectors	<ul style="list-style-type: none">• Address high priority issues• Internal and Framework upgrades	<ul style="list-style-type: none">• PI System Connector• PI Connector for OPC UA	<ul style="list-style-type: none">• PI System Connector• PI Connector for CygNet
PI Interfaces	<ul style="list-style-type: none">• Update OMF Health• Address high priority issues• Internal and Framework upgrades		<ul style="list-style-type: none">• OPC DA, OPC HDA, Modbus Ethernet PLC, DNP3, RDBMS, UFL, PI to PI, Perfmon, SNMP• EMDVB, SISBatch

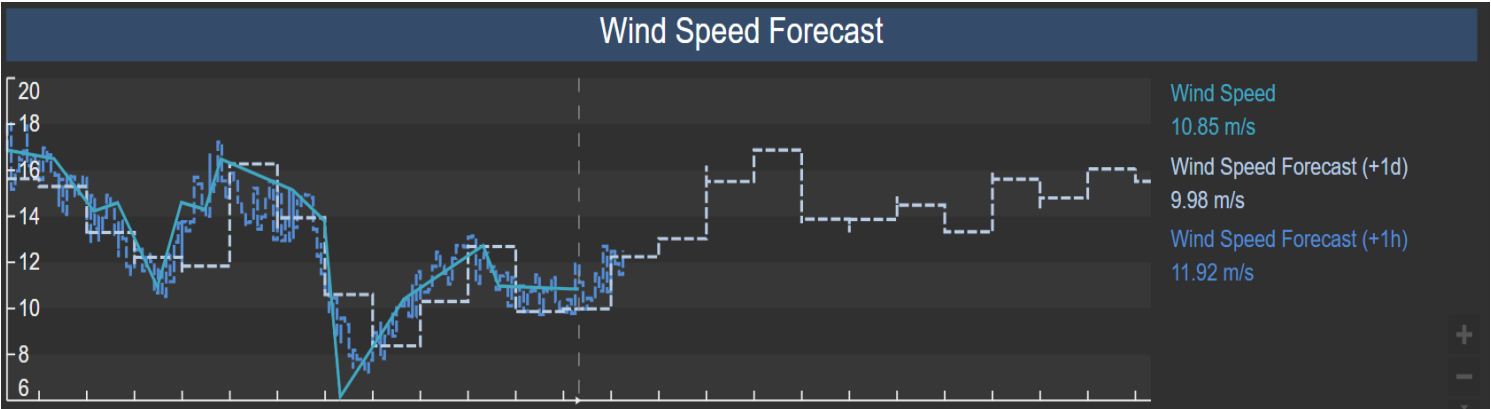
Connect operations domain experts and data scientists



CONNECT to PI Agent: write back from CONNECT to AVEVA PI Server



- $f(x)$ AVEVA Advanced Analytics
- AI CONNECT data services data views
- Custom & partner applications
- CONNECT data services API





JD Irving improves frozen food quality with cloud-based data and analytics

Challenge

- Needed to reduce shift variations on frozen food product quality
- Wanted to predict and understand QA parameters to optimize production process; thereby reducing waste, overprocessing and energy costs
- Lack of no code (low code) data science and machine learning in JDI's existing platform

Solution

- Deployed CONNECT data services and AVEVA™ Advanced Analytics to complement existing AVEVA™ PI System usage, supporting process operators with prediction-based setpoint recommendations

Results

- **Ideal startup and run conditions plus automated operator recommendations are shared to operators in real-time with dashboards and alerts**
- **JDI's people now have real-time access to live and historical asset data, with out-of-the box predictive analytics options, easy and secure data sharing, and other innovative capabilities**



“ Having a real-time data flow from PI System into the cloud with CONNECT, enabled us to provide enhanced product quality to our customer. The user-friendly analytics and machine learning tools supported us with product predictions and will enable us to take on new use cases, which we are very excited about!”

Production Subject Matter Expert, JD Irving

Secure PI Server data sharing with external consumers



CONNECT to PI Agent: support communities features in write back of data



Create secure data communities and share data with external stakeholders. No transfer of data, access is granular and can be revoked at any time by the data owner.

Enables collaboration among stakeholders, sharing information and creating mutual business value

Supports innovative business models for solution providers

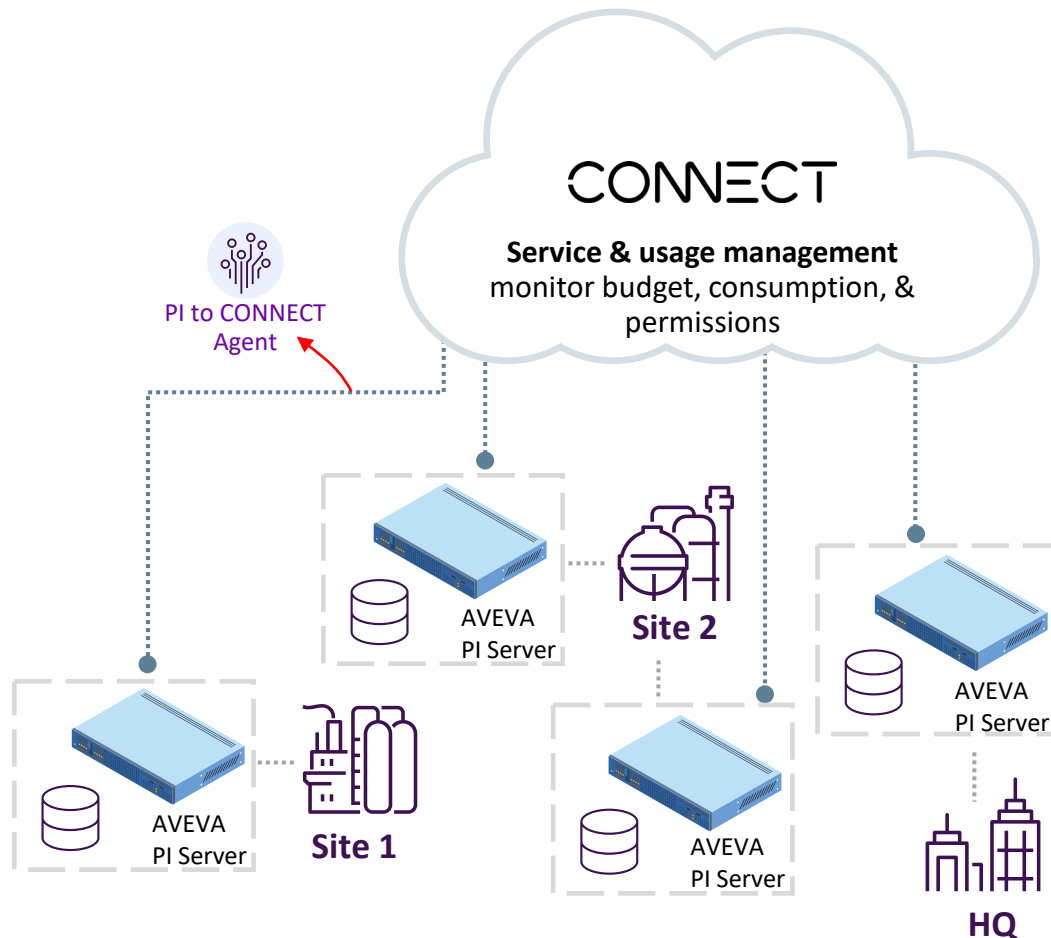
In development

Support transfer of data down to PI Servers once shared through communities

Aggregate tag licensing



Faster, more flexible way to meet changing business needs



Meet expanding business needs with more tags – no added paperwork

- ✓ Flexible architecture in support of enterprise needs
- ✓ Automatic reporting of PI Server tag usage
- ✓ Central monitoring of tag usage in CONNECT

Purchase PI Server tags in bulk without node or site limits

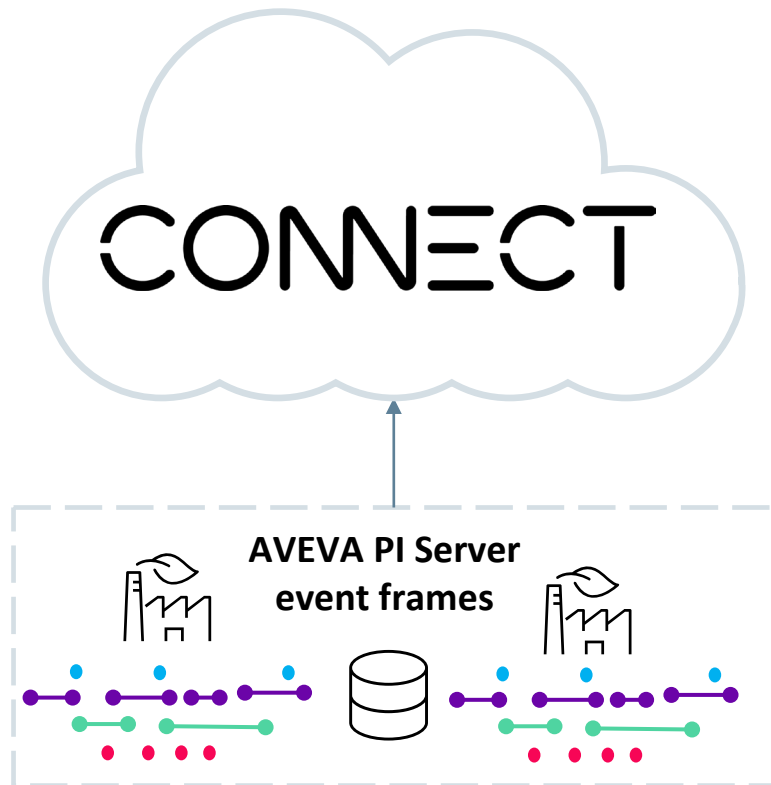
- ✓ Spread tags across multiple PI Servers and flexibly architect deployments
- ✓ Deploy new PI Servers without any additional purchase

PI Event Frames to CONNECT

In development



Elevate PI Server's event frames for expanded enterprise use cases



Centrally historize events from all systems across the enterprise

Perform advanced analytics and apply AI/ML models on event data.
Expose event data to custom or partner applications

Converge event frames with other industrial information through enterprise visualization in CONNECT

Start of a hybrid journey

Investing in the on-premises and complementing it with unparalleled capabilities of cloud and edge

Available today

Reduce IT effort by enabling single sign-on (SSO)

Across AVEVA PI Server hybrid, AVEVA PI Vision, AVEVA PI DataLink, PI Web API, AVEVA Adapters

Diagnostics for Asset Analytics

Displaying the performance and health of calculations in PI System Explorer

Data connectivity

Edge Data Store and AVEVA Adapter Edge Modules
AVEVA Adapter failover

Support claims-based authentication in PI Vision

Support a domainless architecture

Advanced tag search in PI Vision

Writeback of streams from CONNECT to PI Server tags

CONNECT to PI Agent

In development

Support the analytics needs across the enterprise

Increase performance of Asset Analytics
Leverage CONNECT advanced analytics capabilities

.NET Standard AF SDK

New AF SDK version for modern applications

Accelerate support of process monitoring and display management needs in PI Vision

More display editing, process monitoring, and display and user management capabilities

Event Frames from PI Server to CONNECT

Expand data connectivity capabilities

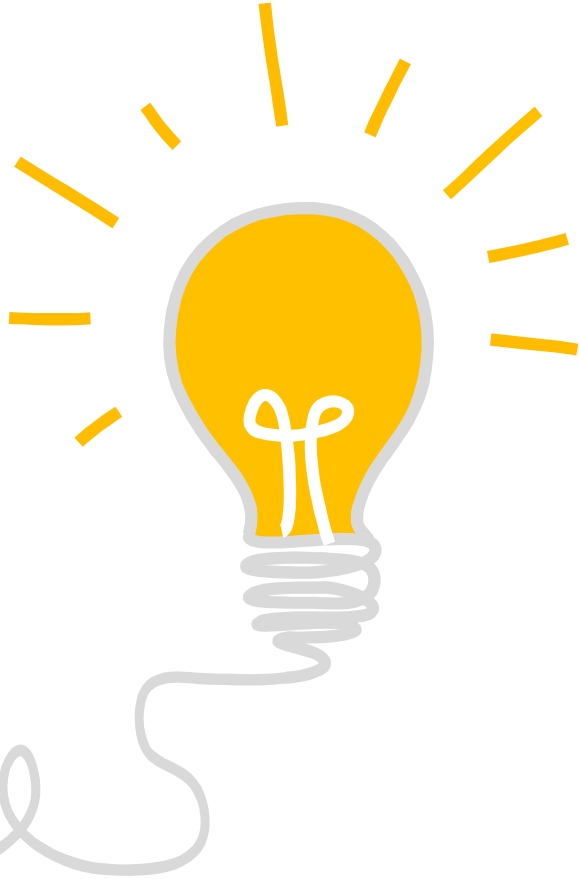
Remote software management, more edge modules, expand Adapter failover

Support hybrid architectures

Azure SQL Database, Azure SQL Managed Instance, and Amazon RDS as host for AF database



Influence the future considerations



<https://feedback.aveva.com>

Let us know your use cases and product needs!

Recommended Sessions

AVEVA: Building your data infrastructure with AVEVA PI Server

Tuesday @ 2:15pm
Room 251

AVEVA: Visualizing your operations data with AVEVA PI Vision

Tuesday @ 3:15pm
Amphitheatre Bleu

AVEVA: Fueling your Data Infrastructure with AVEVA connectivity

Wednesday @ 9am
Room 243

Operations on-ramp to AI and advanced analytics

Wednesday @ 10:45am
Room 251

Michelin Data for Energy Project *Michelin*

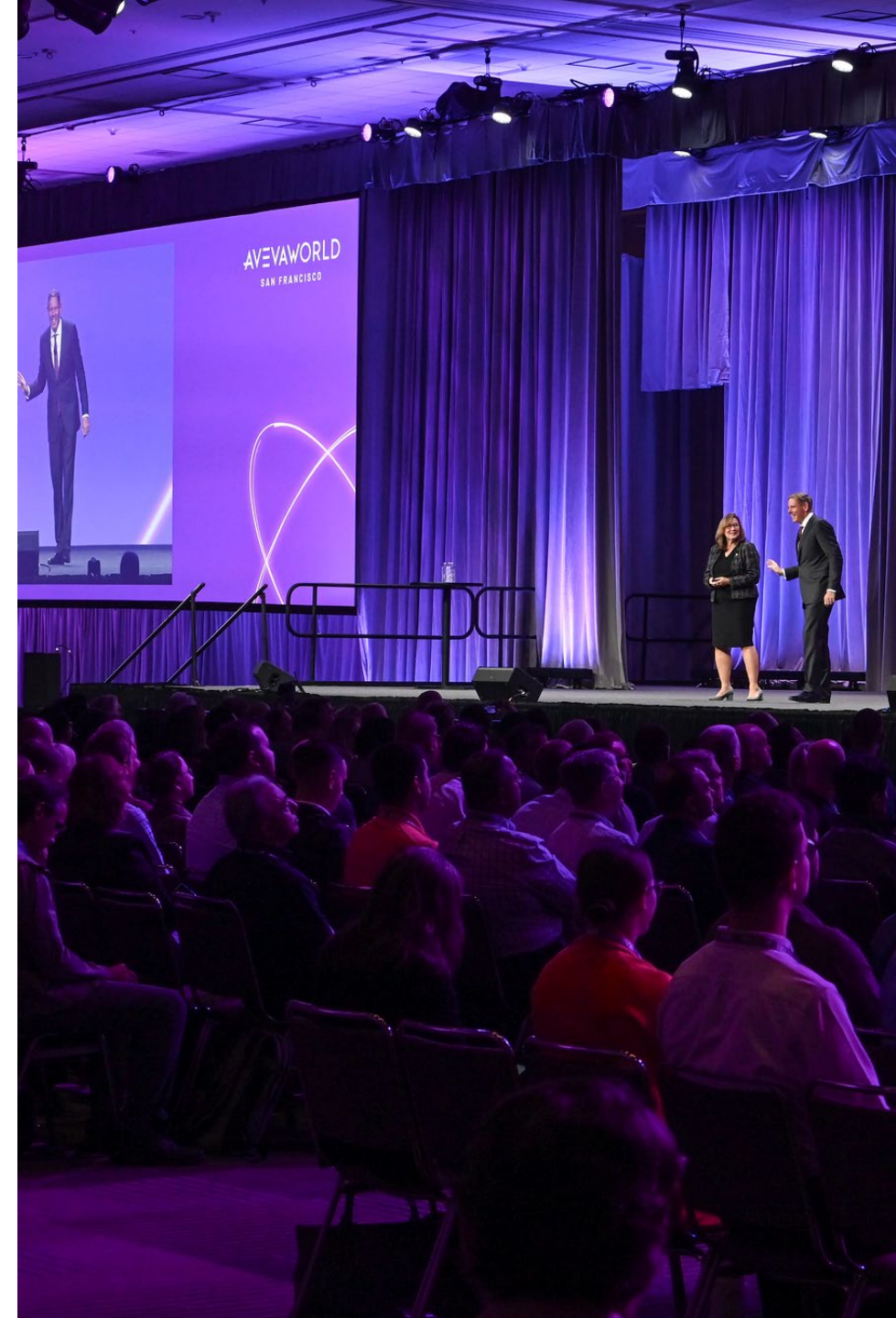
Wednesday @ 2pm
Room 252a/b

CONNECT data services for a data analytics platform at F. Hoffmann-La Roche *Roche*

Wednesday @ 11:30am
Room 252a/b

Modernizing Calpine's Enterprise Data Infrastructure with the AVEVA PI System and AVEVA Predictive Analytics *Calpine Corp, RoviSys*

Wednesday @ 5pm
Room 242b



Mana Afshari, PhD

Director, Portfolio Management

mana.afshari@aveva.com



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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