AVEVA™ PI System™ Roadmap

The continuing evolution to enterprise-wide operations data management

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Number of IoT devices exist in 2030 compared to number in 2020. Data from these devices will grow even faster.

Source: Gartner: Predicts 2022: The distributed enterprise drives computing to the edge.
Organizations that share data externally with their partners generate **3x more measurable economic benefit** than those that do not.

Organizations adopting data hub strategies will achieve outcomes dependent on shared data with at least **60% lower cost.**

Connecting your industrial business

Decision-ready operations data is a strong foundation for connection

- Enterprise use cases
- Sustainability
- Production performance
- Product quality
- Asset health
- Safety & resilience
- Compliance
Connecting your industrial business

Decision-ready operations data is a strong foundation for connection

Tools & data needs

- $f(x)$: Advanced analytic tools
- Data sharing with business partners
- Enterprise visualization
- Custom & partner applications

Data sources

- Control systems
- Historians
- Remote assets, sensors, IIoT devices
- Events data
- Cloud data silos & apps

Real-time data visualization, monitoring & reporting

Data science & AI/ML platforms

Community

- Field technician
- Service provider
- Reliability engineer
- Equipment manufacturer
- Information systems developer
- Data scientist
- Plant manager
- Process engineer

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

The future is not cloud or edge vs. on-premises; it is the flexible architecture for any use case across the enterprise

At the edge
- Pervasive, real-time data collection from sensors, IIoT devices and remote assets

In the cloud
- Scalable data services available for a wider array of users, tools and applications

On-premises
- Enriched industrial data available 24/7 for critical operations
Supporting the traditional data needs
Supporting the evolving data needs

AVEVA PI Data Infrastructure

AVEVA System Platform
AVEVA Historian
Cloud data silos & apps
Remote assets, sensors, IIoT devices
Control systems & historians

AVEVA PI Server

Enterprise visualization
Data sharing with business partners
Data science & AI/ML platforms
Remote monitoring
Advanced analytic tools
Custom & partner applications
Real-time data visualization, monitoring & reporting
Hardening the core of AVEVA PI System & extending the reach of data

On-premises

- Process plants
- & on-premises assets

PI Interfaces
PI Connectors

Control

AVEVA PI Server

Process

AVEVA PI Server

Business

On-premises

- AVEVA PI Vision
- AVEVA PI DataLink
- PI System Access

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Hardening the core of AVEVA PI System & extending the reach of data

- PI Interfaces
- PI Connectors
- Process plants & on-premises assets

On-premises

- AVEVA PI Server (Control)
- AVEVA PI Server (Process)
- AVEVA PI Server (Business)

- AVEVA PI Vision
- AVEVA PI DataLink
- PI System Access

Focus on security & reliability of data infrastructure
Bring more manageability & control to deployments
Grow collection, integration & access capabilities

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Hardening the core of AVEVA PI System & extending the reach of data

**Edge**
- Edge Data Store
- AVEVA Adapters

**Cloud**
- Cloud data silos & apps
- AVEVA Data Hub

**On-premises**
- AVEVA PI Server (Control)
- AVEVA PI Server (Process)
- AVEVA PI Server (Business)

**Process plants & on-premises assets**
- PI Interfaces
- PI Connectors

**Assets beyond the primary control network**

This is not an architecture diagram

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Investing in on-premises and complementing it with cloud and edge

Edge
- Edge Data Store
- AVEVA Adapters
- Assets beyond the primary control network
- Process plants & on-premises assets

On-premises
- PI Interfaces
- PI Connectors
- AVEVA PI Server core

Cloud
- Cloud data silos & apps
- AVEVA CONNECT
- AVEVA Data Hub

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A hybrid data infrastructure from edge to plant to community

AVEVA PI Server

AVEVA Adapters

Edge Data Store

PI Connectors

PI Interfaces

Data Hub to PI*

AVEVA PI Server hybrid

AVEVA Data Hub

AVEVA Connect visualization services

AVEVA Advanced Analytics

AVEVA Data Hub data views

AVEVA Data Hub Community

AVEVA PI Vision

AVEVA PI DataLink

PI System Access

AVEVA CONNECT

Community

Field technician
Reliability engineer
Service provider
Equipment manufacturer
Information systems developer
Data scientist
Plant manager
Process engineer

* in Development
A hybrid data infrastructure from edge to plant to community

AVEVA PI Data Infrastructure

AVEVA Connect
visualization services

AVEVA Advanced Analytics

AVEVA Data Hub
data views

AVEVA Data Hub
Community

AVEVA PI Vision

AVEVA PI DataLink

PI System Access

Community

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AVEVA PI Data Infrastructure

Data without boundaries, from edge to plant to community

Hybrid cloud offering

- Three pillars of AVEVA Edge Data Store, AVEVA PI Server, AVEVA Data Hub
- Connecting fabric of AVEVA Adapters, PI Connectors, PI Interfaces, PI to Data Hub
- and added value through Connect visualization services

Investment protection

A seamless data infrastructure relying on hybrid capabilities delivered over time

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

Enterprise features

A flexible hybrid offering that meets the data needs across the enterprise and beyond

- New aggregate tag licensing option
- More flexibility for scaling data usage in large, multi-site deployments

Easier scaling
Aggregate tag licensing option

Challenge
Customers with large deployments
• Must estimate initial and future tag usage for each PI Server
• Need to go through new license purchase every time to increase tag counts or request additional PI Servers

Solution
• Spread tags across PI Server deployments as needed
• Centrally monitor tag usage in AVEVA Connect

Results
• Deploy new PI Servers without the need to make an additional purchase
• On-ramp to share operations data in AVEVA Data Hub
Our roadmap themes

AVEVA PI System & AVEVA PI Data Infrastructure

Seamless infrastructure from edge to cloud

Manageable software and systems

Increased value and scope of data
Enabling single sign-on across AVEVA PI System

Reducing IT effort and enabling single sign-on (SSO)

- OpenID Connect (OIDC) in support of claims-based authentication
- Leverage AVEVA Identity Manager and AVEVA Connect
- Integrate with your enterprise identity provider
- First release of AVEVA PI Server - hybrid (version 2023) in support of enterprise needs
AVEVA PI Vision
The fastest, easiest way to visualize AVEVA PI Server data

- **2020**: Tag based calculations & display usage monitoring
- **2021**: Asset based calculations & offline display management
- **2022**: Enhanced events analysis & display standardization
- **2023**: Claims-based authentication via OpenID Connect (main site)
- **2023 SP1**: Advanced Tag Search (In development)
- **2024**: Process monitoring and display management capabilities
  - More display editing capabilities
  - More process monitoring capabilities
  - More display and user management capabilities

**Features:***
- Claims-based authentication via OpenID Connect (admin site & display utility)
- Advanced Tag Search

**Researching:**
- In development

**Available today:**
- Asset based calculations & display usage monitoring
- Enhanced events analysis & display standardization
- Claims-based authentication via OpenID Connect (main site)
Enterprise visualization – Connect visualization services

Composable dashboards for visualizing AVEVA Data Hub and other data sources

- Self-service
- Data from Connect and AVEVA Data Hub
- Display sharing with experts outside the organization
Supporting the analytics needs on different levels

**Visual correlations & ad-hoc calculations**

Inspects total power consumption of different assets to identify any abnormal behavior.

**Simple or more advanced streaming analytics**

Unit % uptime, the overall efficiency, total power.

**Data science & advanced analytics**

Predict blockages in fuel mills before they cause outages.
Diagnose for Asset Analytics  
- Displaying the performance and health of calculations

Increase Asset Analytics performance  
**Out of Order Events Improvements**  
- Enabling large writes and reads at the same time

**Update Manager Improvements**  
- Ability to quickly serve consumers after an outage or change

**More PI Data Archive Efficiencies**  
- Implement efficiencies to remove identified bottlenecks

**.NET Standard AF SDK**  
- New AF SDK version so PI System data can be more easily consumed by modern applications
Connect your operations domain experts and data scientists
Connect your operations domain experts and data scientists

**Available today**

- AVEVA Data Hub
- AVEVA PI Server core
- AVEVA PI Server hybrid

**In development**

- Data Hub to PI*
- AVEVA PI Server core
- AVEVA PI Server hybrid

**Active Development**

Final design may change
Results in the hands of domain experts, using familiar tools

**Analytics environment**

- $f(x)$: AVEVA Advanced Analytics
- AVEVA Data Hub data views
- Custom & partner applications
- AVEVA Data Hub API

**Operations environment**

- AVEVA PI Vision

**Wind Speed Forecast**

- Wind Speed
  - 10.85 m/s
- Wind Speed Forecast (+1d)
  - 9.98 m/s
- Wind Speed Forecast (+1h)
  - 11.92 m/s
No matter where your data resides, AVEVA has the technologies to collect & store it

Remote device management
- Install & monitor edge modules using AVEVA Edge Management

Edge Data Store and AVEVA Adapter Edge Modules
- Docker images that support remote device management; includes OPC UA & MQTT

AVEVA Adapter failover
- Available with OPC UA and MQTT Adapters

Stability, performance, and security updates
- PI System Connector
- Batch, PItoPI, OPC DA, OPC A&E Interfaces

Remote software management
- Configure & monitor edge modules using AVEVA Data Hub

More edge modules
- Release more AVEVA Adapters as edge modules to configure and monitor via AVEVA Edge Management

Extend failover to more AVEVA Adapters
- Release more Adapters with failover capability

Continued Support and Investment
- Connectors: Relay, PI System, OPC UA
- Various Interfaces

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Start of a hybrid journey

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

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

Support the analytics needs across the enterprise
Increase performance of Asset Analytics
Leverage Data Hub advanced analytics capabilities
Write the results back from Data Hub to PI Server

.NET Standard AF SDK
New AF SDK version for modern applications

Support claims-based authentication in PI Vision
Support a domainless architecture

Available Today

Focusing on stability, security and reliability
Prioritizing the must-haves and doing what is right for AVEVA PI Server core

In Development

Diagnostics for Asset Analytics
Displaying the performance and health of calculations in PI System Explorer

Advanced tag search in PI Vision

Data connectivity
Edge Data Store and AVEVA Adapter Edge Modules
AVEVA Adapter failover

Expand data connectivity capabilities
Remote software management, More edge modules, Expand Adapter failover

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Use cases we are researching

**Support the enterprise sustainability initiatives**
Leverage the industry-specific library of templates
Publish to AF across the enterprise

**Support hybrid architectures**
Azure SQL Database and Azure SQL Managed Instance as host for AF database and PI Vision database

**Enable partners to provide service offering for monitoring health of the PI System deployments**
Make deployment and health data of PI System available in AVEVA Data Hub where it can be easily and securely accessed by partners

**Accelerate support of process monitoring and display management needs in PI Vision**
More display editing capabilities
More process monitoring capabilities
More display and user management capabilities

**Assets handling across PI Data Infrastructure**
Collection, storage, and transfer of asset metadata (Edge, Adapters, Data Hub to PI)

**Event handling across PI Data Infrastructure**
Collection, storage, and transfer of event data (Edge, Adapters, PI to Data Hub)
Influence the AVEVA PI System roadmap

https://feedback.aveva.com

Let us know your product feedback!
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• AVEVA

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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.

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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.

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