Using AVEVA™ PI System™ for aggregated analysis of HMI/SCADA data

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• AVEVA™ Historian in the control network
• Demo: Replicate AVEVA™ Historian data to AVEVA™ PI System™
• Why aggregate HMI/SCADA data to AVEVA™ PI System™?
AVEVA™ Historian in the control network
Consolidate Multiple Systems

- Centralized information
- Long-term system of record
- Works well for very similar sources
Consolidate Multiple Systems

- Centralized information
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And...
- Normalize dissimilar sources
- Extend raw time-series data
  - Richer information model
  - Add analytics/calculations
  - Event context
Integrating with AVEVA™ PI System™

- **Includes:**
  - “Simple” replications (every value)
  - Tag meta data
  - Asset Framework model from “Model View”
  - “Original” data

- **Does Not Support:**
  - “Summary” replication
  - Alarm history
  - “Versioned” data (CSV/SQL/SDK updates)

- Based on OMF/Adapter Framework
- Also works with AVEVA™ Data Hub

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Why aggregate HMI/SCADA data to AVEVA™ PI System™?
Leverage a holistic portfolio purpose-built for industry.

**Enterprise Visualization**
Gain single-pane-of-glass visibility across engineering, operations, and business information.

**Simulation and Learning**
Accelerate process design innovation.

**Engineering and Execution**
Maximize efficiency of capital projects.

**Asset Performance**
Improve reliability with AI insights.

**Production Optimization**
Optimize productivity and quality in real time.

**Planning and Scheduling**
Stay ahead of a fast-changing market.

**Engineering Information**
Deliver projects on time and improve safety and performance with rapid, intuitive access to the digital twin.

**Operations Information**
Break through silos with contextualized information and self-service tools that accelerate analytics projects.

**Operations Control**
Drive instant decision-making and safe operations with responsive visualization and control.

**Data Sharing**
Collaborate securely within and beyond the enterprise.

**3rd-party ERP, CRM, PLM**

**3rd-party apps and analytics**

**3rd-party systems and databases**

**3rd-party sensor data and other data sources**
- SCADA
- MMMs
- Historian
- PLCs
- DCSs
- Edge/IoT

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Managing operations data is complex

Operations data sources
- SCADA
- DCS
- PLC
- Controllers
- Databases
- Instruments
- IIoT Gateways
- OPC
- Text files
- Manual data

Complexity
- Historian
- Asset reliability
- LIMS
- CMMS
- EMS
- ERP
- Planning & scheduling
- Excel
- BI tool
- Cloud system
- Data lake
- Analytics platform

Data consumers
AVEVA™ PI System™ connects people to data with an infrastructure approach

Operations data sources

- SCADA
- DCS
- PLC
- Controllers
- Databases
- Instruments
- IIoT Gateways
- Cloud systems

AVEVA PI System

- Collect
- Store & Enrich
- Visualize & Deliver

Data consumers

- Visualize
- Report
- Analyze
- Notify
- Share
- Integrate

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Gather past, present, & forecasted data from hundreds of sources

- Connect to any asset regardless of vendor, location or environment
- Supports 225+ industrial protocols
- Developed and maintained by us
- Configuration only. No programming required
Turn raw data into actionable information

- Store high-frequency and large volumes of data
- Provide context to your data
- Run real-time analytics on your raw data
- Bookmark & notify on key events and batches in your data
Enrichment features turn data into decision-ready information

Add structure and meaningful context to your operations data

Automatically pinpoint important events in your operations

Optimized storage & access to massive volumes of operational data

Transform raw data into actionable KPIs using streaming calculations

Send automatic alerts to the right people with the right information

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AVEVA™ PI Server

AVEVA PI Server layers data enrichment services on top of an industry-leading, real-time operations data store.

- Data Archive: real-time data storage
- Asset Framework: adds context to raw data streams
- Asset Analytics: user-defined calculations
- Event Frames: bookmark important events
- Notifications: send email or alerts when action is needed

AVEVA PI Server
Deliver operations insights in real-time to anyone, anywhere

- Dynamic, real-time displays that update in seconds, not minutes
- View KPI’s in Microsoft Excel or on any web-browser enabled device
- Build self-service dashboards or reports without requiring assistance from IT
- Publish large-scale real-time exports and streams of data and metadata to third-party geospatial, big data, or business analysis platforms
- Rich programmatic access to build anything on AVEVA PI System
AVEVA™ PI Vision: Real-time data visualization for decision makers

• An easy to use, self-service, scalable visualization solution
• Dynamic displays
• Access real-time OT data from any device – phone, tablet, laptop, desktop
• Share real-time displays across your organization
Native Data Egress from AVEVA™ PI System™ Infrastructure within AVEVA Portfolio

Collect

AVEVA PI System

Store & Enrich

Visualize & Deliver

Data consumers

AVEVA™ Data Hub
AVEVA™ PI Integrator for Business Analytics
AVEVA™ Predictive Analytics
AVEVA Reports for Operations
AVEVA™ Unified Operations Center
AVEVA™ Asset Information Management

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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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