DATASHEET

AVEVA™ InTouch HMI
formerly Wonderware

The world's #1 HMI

AVEVA InTouch HMI is powerful HMI (human-machine interface) software for controlling and monitoring industrial processes. It seamlessly extends the reach of plant data outside the control network to both management and business users through web-based displays, dashboards and reports.

AVEVA InTouch HMI powers more than 100,000 plants and factories around the world, helping them achieve world-class performance, reduce costs and improve product quality. It goes far beyond the ordinary HMI to deliver:

- Legendary ease of use
- Unlimited web and mobile access
- HMI that works everywhere
- A 30-year history of protecting your engineering investment
- Native cloud integration for engineering efficiency and collaboration

AVEVA

Visualize, control and optimize your operations

The more complex your operations become, the more you need a common-sense, real-time view of your business. Innovators around the world standardize and visualize entire enterprises using the power of AVEVA InTouch HMI.

AVEVA InTouch HMI will take you beyond simplistic graphics and create meaningful content that will increase the productivity of your operations and save costs throughout your enterprise.

Operators use AVEVA InTouch HMI to optimize routine human interactions with industrial automation systems. Its unique situational awareness libraries provide operators contextualized information so they can address abnormal situations quickly and accurately–before they impact operations. The result is a quantifiable net increase in operator effectiveness: Operator interpretation time improves by up to 40%.

InTouch HMI web client: Extending HMI visualization with web experience

Personal workspaces

This new capability lets any InTouch HMI user develop ad hoc run-time displays without any engineering development tools or scripting, so they can seamlessly access data at their fingertips. Personal workspaces empower operators in real time with responsive web visualization.

Map app web widget

The new map app web widget incorporates a zoomable map into InTouch HMI applications and displays selected graphics in a geographical context. It supports many popular map providers, including Bing, Google, Baidu, ARCGIS, and more. It's perfect for geographically distributed applications, such as oil and gas and water/wastewater. Both AVEVA InTouch HMI and the InTouch HMI web client support the map app web widget.

Carousel web widget

The carousel widget creates a rotating sequence of graphics within both AVEVA InTouch HMI and the InTouch HMI web client. Think of it as a "slide show" of symbols that automatically rotate at a configurable predefined interval. It's perfect for wall-mounted display monitors that need to rotate between multiple production dashboards with KPIs or operational information on a periodic interval. It has multiple other uses as well, including use with smart TVs with built-in web browsers.

WindowMaker – Modern development environment

WindowMaker has a modern look and feel, with streamlined workflows for increased engineering efficiency. Redesigned icons give users an enhanced experience. Highlights of the new WindowMaker user interface include:

- New backstage, menu items and groups. All the configurations and special operations that need to be accessed frequently are now in the backstage under the File menu. All other InTouch HMI commands have been reorganized in different menu items based on their functionality and ease of accessibility.
- Customizable displays. WindowMaker can switch between light and dark themes so you can customize it for your comfort.
- Improved search functionality. You search for keywords within windows, scripts, tags and symbols simultaneously.

AVEVA InTouch HMI introduces a new application manager that's far more than just a change in look. It improves on existing workflows and adds new ones.

It also includes a list view and a tiled view in addition to the classic detailed view. The new list and tiled views give better visibility to the details of InTouch HMI applications and make several operations available directly from the tiles. With new workflow improvements, creating applications now only takes two steps instead of nine.

Features and functionality of AVEVA InTouch HMI

Secure access anywhere from any device

AVEVA offers the most comprehensive portfolio of secure, web-based visualizations of your real-time automation solutions, including the AVEVA InTouch HMI web client and AVEVA InTouch HMI Access Anywhere. You can now access them on any HTML5-compliant web browser, with zero client installation and zero maintenance. So, everything is at your fingertips–from full high-fidelity, remote real-time control to casual, real-time production monitoring.

Moreover, the world's favorite HMI is also fully mobile and works natively on tablets and smartphones.

In addition, for remote operators, AVEVA InTouch HMI Access Anywhere is an extension that provides industry's most secure access to InTouch HMI applications via any HTML5-compliant web browser. It enables users to securely monitor, control and troubleshoot plant equipment or processes from any location, on any device, at any time.

The AVEVA InTouch HMI web client

- Ideal for mobile operators and business management
- Read-only or read-write
- Works for TVs and wall-mounted monitors around the plant facility
- Good for embedding HMI graphics in business enterprise portals
- Runs on both Microsoft Windows Server or Workstation OS
- Has supports for reverse proxy, enabling secure access outside the control network

AVEVA InTouch HMI Access Anywhere

- Ideal for remote operators, with full process control
- Read-only or read-write
- High fidelity access to the entire AVEVA InTouch HMI application, including scripts/.NET and ActiveX controls
- Ideal for use beyond DMZ using secure gateway
- Runs only on Microsoft Windows Server

Extensibility through open standards, including OPC UA

AVEVA InTouch HMI is an open and extensible HMI with intuitive graphical animation and scripting capabilities that give application designers incredible power and flexibility. It supports .NET scripting, and lets you import custom script DLLs, giving you the freedom of unrestricted application extensibility.

AVEVA InTouch HMI allows you to connect to any device or back-end system by using standard interfaces, such as OPC UA, OPC DA, SQL, SOAP, HTTP/S, and .NET, for external connectivity. Open connectivity allows real-time plant data to become an integral part of business.

AVEVA InTouch HMI also serves as an OPC UA server endpoint. Enterprise and business systems can connect to any real-time tag or alarm data over encrypted communications.

AVEVA InTouch HMI also supports the seamless creation of tags by browsing any OPC UA data sources. Users get an intuitive workflow that lets them drag and drop onto the graphic canvas. The canvas shows associated graphic elements and applicable animations, drastically reducing development time.

Modernization of stand-alone AVEVA InTouch HMI applications

The latest release of AVEVA InTouch HMI gives thousands of new and legacy users the opportunity to benefit from industrial graphics, richer animations, multi-touch, web access and more. Now all AVEVA InTouch HMI legacy users have the power of industrial graphics and frame windows. Those capabilities provide a familiar WindowViewer-like experience across web browsers and give users the foundation to deliver stand-alone AVEVA InTouch HMI applications in a web browser using the AVEVA InTouch HMI web client.

Seamlessly convert existing native InTouch HMI windows to industrial graphics with one click

The latest release no longer requires installation of SQL Server to use industrial graphics in standalone applications. This drastically improves the process of installing the product and creating new applications as well as opening, launching and saving applications. It also lets you distribute AVEVA InTouch HMI applications by simply copying the application folder across machines.

Native integration with AVEVA™ Historian

AVEVA InTouch HMI supports a high-performance native interface to historize InTouch HMI tags, including alarms and events, to AVEVA Historian.

You can choose to archive data either to the traditional local historical log file (*.lgh file), to AVEVA Historian, or to both. This functionality also provides store and forward capability when historizing.

AVEVA Historian automatically calculates historical summary data (average, minimum, maximum, standard deviation, and time duration in a particular state). You can greatly enhance operators' situational awareness by displaying this aggregated information in AVEVA InTouch HMI.

Collaborate enterprise-wide in the cloud

AVEVA InTouch HMI delivers tighter integration with several other AVEVA products through AVEVA™ Connect.

AVEVA™ Insight–self-service dashboards in the cloud

Users can access the AVEVA Insight publisher from both the InTouch HMI application manager and InTouch HMI WindowMaker, so they can easily send data and tag configuration from an InTouch HMI application to AVEVA Insight for operational reporting, charting and dashboarding.

AVEVA™ Integration Studio–now offering cloud storage

In addition, InTouch HMI WindowMaker integrates with AVEVA Integration Studio, which allows HMI designers to share industrial graphics across teams and sites. That helps them engineer efficiently and easily roll out graphical standards across an organization.

HMI builders can continue to design industrial symbols locally, then drag and drop symbols to cloud storage, making them instantly available to others–who can go on to use and edit graphics in the cloud. These capabilities give users a powerful way to maintain and share standards across teams and sites.

AVEVA™ Development Studio–with industrial graphics support versioning

Users with an AVEVA™ Flex license can manage and publish multiple versions of graphics to the cloud to further improve collaboration and standardization.

Native mobile app for Android and iOS

Remote and local operators experience the same look and feel on tablets and smart phones, with support for multi-touch centric pan and zoom functionality, including the ability to write back and acknowledge alarms.

Moreover, users can access applications in their preferred language, as the mobile app supports language-switching in runtime.

Situational awareness for operator effectiveness

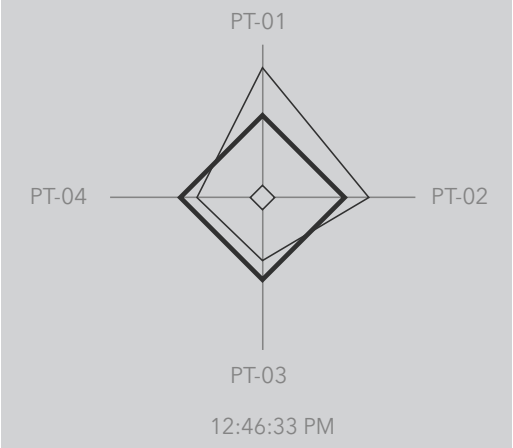
AVEVA InTouch HMI has an extensive library of graphical symbols, wizards, templates and elements that provides rich user experiences and high contextualization. The graphics have built-in quality-processing and diagnostic indication, enabling you to rapidly determine root causes of abnormal situations. Millions of preconfigured and pretested combinations and orientations of symbols make this the largest graphics library in the industry.

The situational awareness library of industrial graphics is AVEVA's unique approach to presenting actionable information in less time to operators. Library symbols may be used out-of-the-box or customized as needed. You may add your own new or modified symbols, or you may create your own special libraries of symbols to suit your engineering and development requirements. The library includes:

- Dashboard symbols
- Alarm symbols
- Trend symbols
- Equipment symbols
- Input symbols
- Instrumentation symbols
- Status symbols
- Advanced symbols – Polar star
- Equipment symbols – Valves, agitator, tank
- Many other Symbols – Level meter, hand switch, output bar, etc.

Polar star

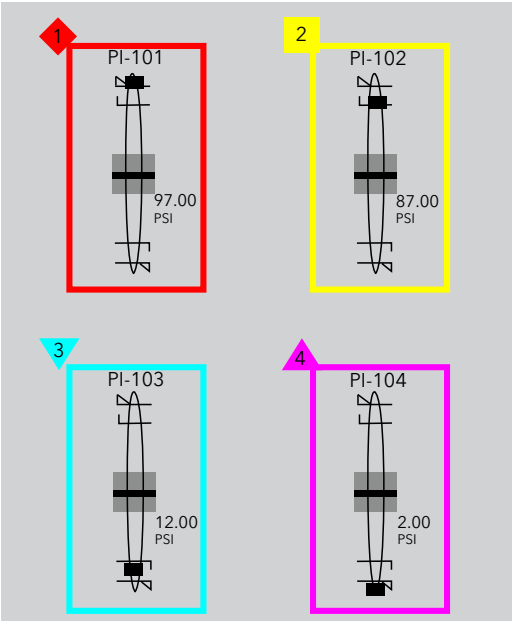
One of the advanced symbols is the polar star, which shows a set of related process values on ‘spokes’ that form a visual polygon. As values change along the length of the spokes, operators can easily recognize the changing shape of the polar star’s polygon and react quickly to abnormal process conditions. Each spoke contains a set of custom properties with which to set value set-points and alarm limits, and coordinate set-point locations for the normalized process value. When a process value changes from its set-point location on a spoke, the animation changes the shape of the polar star polygon.



Polar Star - abnormal

Alarm annunciations

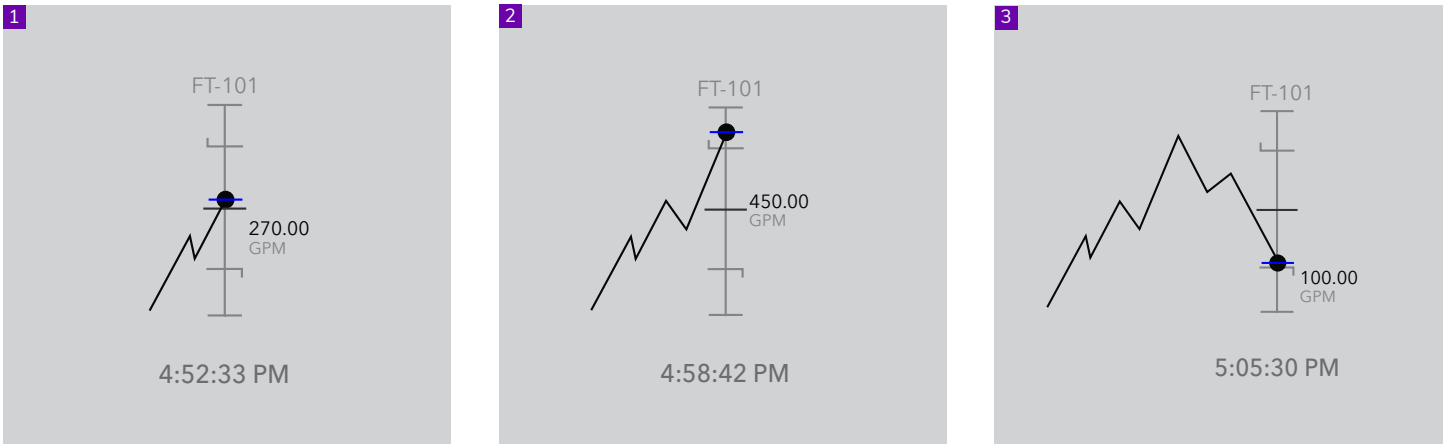
Alarm annunciations are triple coded to convey critical information in three ways: color, shape and text. Triple coding ensures unambiguous interpretation of alarms for faster operator reaction time and fewer mistakes. Color-coded alarm border animations around graphics clearly indicate the level of alarm state to help operators quickly identify abnormal situations and take corrective action in the proper order of priority. Alarm border animations can be configured to blink, remain solid, or change based on Un-acked, acked, or return-to-normal situations. Severity levels–indicated by unique shape, color and level number–display directly next to a symbol for quick, clear, concise information contextualization. These animation capabilities come fully configured and fully functional and require no scripting.



Triple coded for faster operator reaction and prioritization

Trend pen

Easy to configure, single-pen and multi-pen trend symbols provide not only the current data value but also the recent historical data trend in a specific absolute fixed time range or in a moving window time range, enabling an operator to instantly distinguish recent activity and dramatically improve predictability of potential future events and handling issues before they become full alarms or events.



Three snapshots over time of a trend pen

Connection points and connectors

Every HMI design includes graphic elements and connectors between elements, such as a pipe, wire or line. Much of the design time goes into connecting graphic elements to one another. For most HMIs, this connecting can be a tedious effort and can prove especially frustrating when graphics are repositioned in the design phase or if the graphic is required to move at runtime because of animation.

AVEVA InTouch HMI relieves this frustration with connection points and connectors that provide resilient connections between graphics with simple point, click, drag and drop operations. With these new features, whenever graphics are repositioned, either in design or run-time, the connectors adjust and move with the graphics to maintain the connections.

Breakthrough advanced engineering tools

Design, distribute and enforce graphical component standards for greater application consistency and optimized application design and maintenance using element styles, numeric formatting and graphic protection. Shorten initial and maintenance design phases using graphic template change propagation, which lets engineers make a change once and propagate it throughout the entire application.

User-defined types (UDT) structures

Use UDTs to create your own structures to match field equipment or existing structures in your PLCs. You can create and reuse custom data types or structures, akin to object-oriented HMI design, while nesting up to six levels.

UDT instance members behave like any tag and support industrial graphics symbols, animations, scripts, historian and alarms. UDT instances immediately reflect changes in data-type definitions.

Scalable vector graphic (SVG) support

With support for SVG, AVEVA InTouch HMI drastically reduces the effort needed for HMI development. You can import externally created SVG graphics, whether they're saved as image files or converted to AVEVA Industrial Graphics format. Rich animations and pixelation-free SVG graphics that are truly crisp regardless of image size improve the experience of end-users.

Resolution independence

In a world in which ever more devices with diverse form-factors abound, users often need to design applications of uncommon sizes or simply to design an application for displays the designer has no access to.

AVEVA InTouch HMI now allows users to design applications in a target resolution different from the development machine.

Resolution-independent graphics can be resized or stretched without losing original visual quality, which improves window display performance and lets you reuse graphics designed in one resolution in a different resolution without distortion.

Element styles

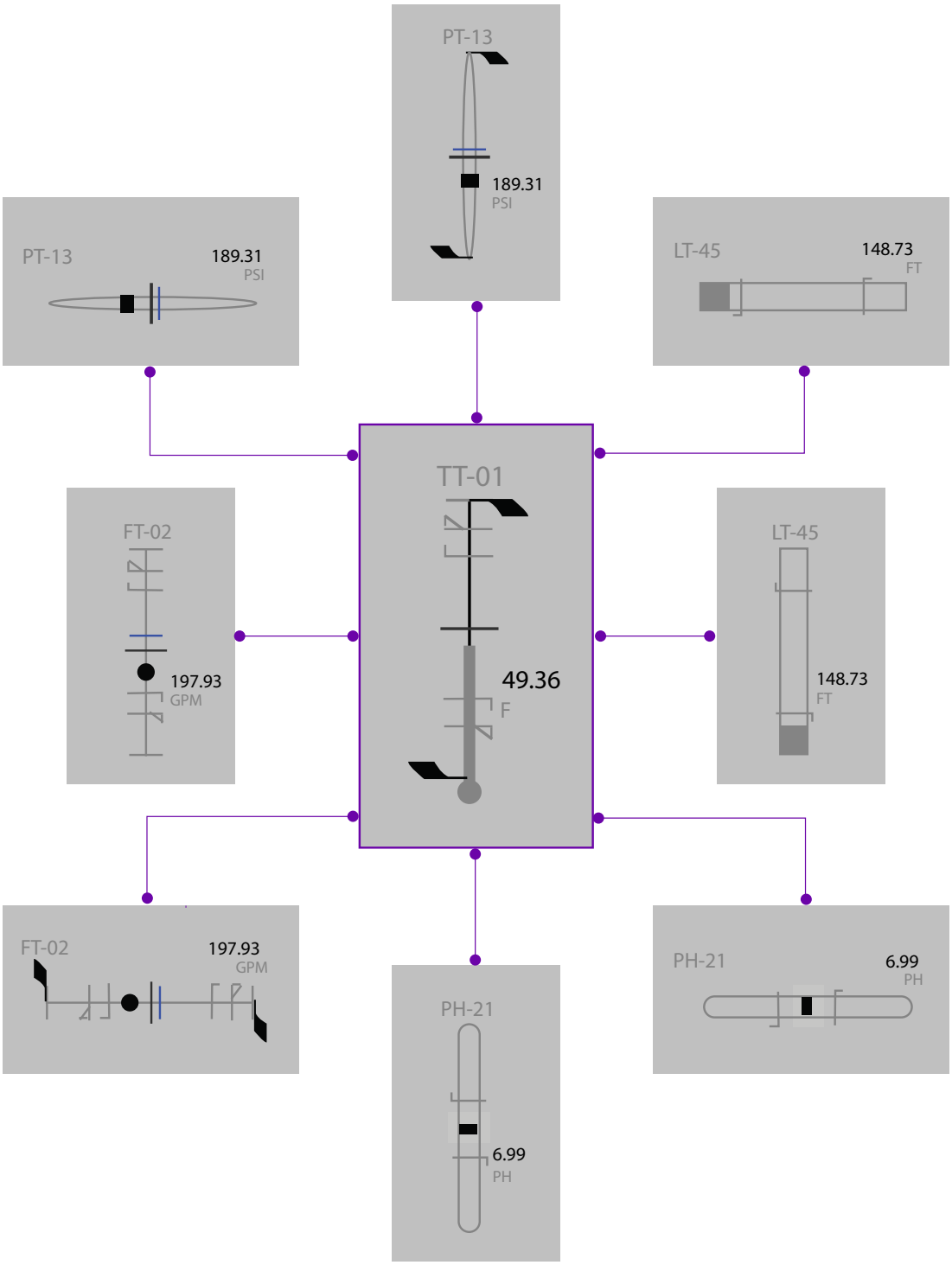
Element styles let users define a consistent look and feel for their HMI across the enterprise–regardless of who designed it or when. Typically, HMI applications get developed over time by many engineers, which can lead to inconsistency in both standards and the use of colors, text, and alarm or event indicators.

Element styles lets you combat such inconsistency by ensuring that every screen across your enterprise can have the same methodology for presenting information in context. It lets you engineer, manage and standardize colors, indicators, and text formats–all in a single, user-friendly element styles editor tool. You can update your applications globally with just one click using the centralized management and deployment capability.

Such standardization improves operator training, reduces operator confusion, and enables operators to orient to the critical information more quickly–without the need for interpretation. Moreover, any operator in any plant will understand information in the same consistent manner.

Symbol wizards

Symbol wizards let engineers automatically assemble a single composite symbol out of custom configuration options, such as graphical elements, scripts and custom properties. These composite symbols with multiple configurations reduce the number of symbols engineers need to create for an application



Each symbol Wizard can be easily configured into many different visual and functional symbols

XML import or export

Consistent with AVEVA's open format philosophy, AVEVA InTouch HMI lets you publish graphic elements in an open format schema to support the programmatic import and export of graphic elements and most animations with advanced editors. Pull third-party graphics such as CAD drawings directly into your HMI to save time and completely maintain the integrity of the original graphic.

Application templates

Another great productivity tool, application templates allow users to start the design of a new HMI application from a base template instead of starting from scratch, saving hours and hours of engineering. Application templates can be as simple as a navigation framework or as rich as the user desires.

System integrators can reuse their engineering in multiple projects, OEMs can deliver base applications to their end users, and new users can get started in a shorter time.

Users select application templates via a template browser, which provides a thumbnail preview of the templates. They can organize application templates in a folder structure of their choice–by resolution, industry, customer, engineering team, etc. A number of application templates are available out-of-the-box, but users can also create their own.

Window templates

You can now define AVEVA InTouch HMI windows as templates, so you can create new windows from them and inherit window properties, content and scripts–another productivity feature that helps save engineering time.

Scripting

The software supports both simple and advanced scripting and offers hundreds of in-built script functions. Recent enhancements include auto-complete in script editors and graphic editor expressions, line numbering, multi-level undo-redo, automatic syntax checking, consistent color coding in line highlighting, and syntax error indication.

Security and reliability

Microsoft Windows Authentication grants permissions to AVEVA InTouch HMI users who are authenticated on a domain controller or local computer, based on user identity and group affiliations.

In addition, AVEVA InTouch HMI supports identity management through AVEVA Connect for authentication and includes encrypted web communications support for SSL and HTTPS.

When AVEVA InTouch HMI is part of a subscription to AVEVA™ Operations Control (Edge edition), an AVEVA unified identity enables secure access to all entitled products on a given node with AVEVA Connect cloud capabilities. Each user gets a single, unique user ID that works on all products, configured and managed within AVEVA Connect. It supports common user authentication, authorization and access entitlements across AVEVA Operations Control products. It includes:

- User authorization via roles, groups and permission access rules.
- Single sign-on (SSO): After you sign on to a supported product, subsequent sign-ons to that product or other supported products on the node are automatic.

For FDA traceability and electronic signature security, AVEVA InTouch HMI supports secured and verified writes in conformance with 21CFR11, establishing different users to secure and verify an action. In addition, users can enter a comment when performing the secured and verified write.

AVEVA InTouch HMI can also run as a Windows service (Faceless), which users typically use in tag server architecture.

Localization and language switching

AVEVA InTouch HMI is fully supported in English, German, French, Japanese and Simplified Chinese. It offers a localized development environment that lets non-English speaking engineers design and develop HMI applications in their native languages.

InTouch HMI language-switching capabilities let users design applications that can change the displayed language at run-time, addressing the needs of international users. AVEVA InTouch HMI also includes the language assistant, an Excel add-in that's great for OEMs, SIs, and global users. It improves the management and accuracy of off-line HMI language translation and accelerates the execution and delivery of projects using the run-time language switching capabilities in AVEVA InTouch HMI. Its benefits include more efficient translation projects that result in improved translation accuracy and consistency, reduced costs, and faster project deliverables.

Enhanced user experience

Rich animations

AVEVA InTouch HMI gives users the ability to animate many of the graphics and element styles. Graphic animations directly link to real-time data values to dynamically reshape the multi-point graphic elements as data changes.

This animation capability automates high-level geometric mathematical formulas so engineers can create animated pie charts, polar stars, polylines, curves, polygons, and closed curves that visually reshape in real time. Graphics can visually represent direct, indirect and associated relationships of multiple data points so operators can clearly understand when a process is within acceptable boundaries, or which part of the process is out of alignment or possibly moving out of alignment.

Pan and zoom

Pan and zoom provides a simple, intuitive way to interact with your visualization applications in a modern multi-touch hardware environment. Pan and zoom can also be enjoyed using a keyboard and mouse in addition to a multi-touch interface. Moreover, you can access zoom level programmatically, enabling powerful tasks such as application clutter/de-clutter and more.

AVEVA InTouch HMI–Simply the best HMI investment

With an over thirty-year history of never leaving any customer behind, AVEVA InTouch HMI consistently provides a seamless upgrade path year after year, which protects customers' investments in InTouch HMI applications.

An InTouch HMI application implemented decades ago can still run–unchanged, without reengineering the application–in a modern user experience. It's simply the best HMI investment you can make.

Value-added cloud capability also lets you develop applications, analyze production data and improve operations without incurring on-premises IT costs. Whether you are ready to migrate to a cloud environment today, or you simply want the flexibility to do so in the future, an AVEVA Flex subscription provides the underlying infrastructure to make that transition when you are ready.

Commercial flexibility

Unlimited tag count

AVEVA InTouch HMI 2023 supports an unlimited tag count. This means that the run-time database (InTouch HMI tag name dictionary) can store unlimited tags, including local tags and tags that reference a remote tag source.

The unlimited tag license will be sold through the AVEVA Flex program and unlocks InTouch HMI application scalability.

In addition, AVEVA InTouch HMI will be sold in the following tag counts:

- 1,000
- 2,500
- 10,000
- 100,000
- Unlimited

Web client licenses

In an effort to offer more licensing flexibility, InTouch HMI web server is now offered in 5-, 10-, and 25-client packs in perpetual licenses. This offer expands on the InTouch HMI web server with the unlimited user client license offering currently available through the AVEVA Flex commercial model.

For more information on AVEVA InTouch HMI please visit:
aveva.com/en/products/intouch-hmi

PRODUCT DATASHEET

AVEVA™ Historian

formerly Wonderware

Capture and store high-fidelity industrial data.

AVEVA Historian is a high-performance process historian capable of storing huge volumes of data generated from today's industrial facilities. AVEVA Historian easily retrieves and securely delivers information to desktop or mobile devices, enabling organizations to analyze processes anywhere at any time.

Summary

AVEVA Historian is the first, large volume plant data historian to unite a high-speed data acquisition and storage system with a traditional relational database management system, facilitating access to plant data using open database standards.

Business value

- A complete and accurate operational history provides a foundation for faster troubleshooting and easier discovery of high value process improvement opportunities.
- Flexible, scalable implementation options reduce IT costs and accelerate system ROI. High availability and disaster recovery options help ensure business continuity.
- Comprehensive reporting and data analysis options enable more team members to gain value from your process history and having access to data enhances collaboration.

AVEVA Historian combines advanced data storage and compression techniques with an industry-standard query interface to ensure open access to all of your process, alarm and event data, enabling faster, more informed decisions while keeping your team fully informed on operational performance.

AVEVA Historian is the perfect companion to the world's leading human machine interface (HMI) AVEVA™ InTouch HMI, AVEVA™ System Platform, Citect SCADA, AVEVA™ Edge and ClearSCADA allowing you to easily store data coming from your HMI SCADA application. AVEVA Historian is offered in a number of configurations to meet the needs of any industrial facility, from a single site to a multifacility global enterprise.

Data stored in AVEVA Historian is easily accessible using a comprehensive set of integrated reporting and data analysis tools. From your desktop, laptop, tablet or smart phone, AVEVA Historian data is available 24/7 helping you better manage and improve your process.

Highly scalable and flexible

AVEVA Historian offers greater scalability and more deployment options than ever before. AVEVA Historian can collect and store all of your vital process, alarm and event data up to 2 million tags.

AVEVA Historian can be deployed to monitor a single process or an entire facility. It can expand as a tiered AVEVA Historian, capable of storing data locally and aggregating data at the corporate level to simplify the most demanding data reporting and analysis requirements.

Data integrity

In many industries like Upstream Oil & Gas or Water & Wastewater, remote facilities are connected via low bandwidth data communications systems. Network efficiency is a key consideration. AVEVA Historian has increased network efficiency by up to 92% so all of your high resolution data is captured accurately every time.

Data can also be intermittent, late, or come in bursts, straining the ability of a historian to keep up. The high performance AVEVA Historian data storage engine can handle data bursts of late data without adversely affecting system loading. AVEVA Historian can even handle data coming in from systems with mismatched system clocks, preserving the correct data sequence automatically.

Regardless of your industry, AVEVA Historian delivers the high levels of data integrity required by today's most demanding companies.

Business continuity

Business continuity is a growing concern among leading industrial companies. How do you ensure that your plant historian keeps functioning if a computer system fails or if you experience a natural or man-made disaster?

With AVEVA Historian, it is simple to create distributed configurations that address your business continuity concerns. Redundant servers ensure reliable data access to data that has been reliably collected and stored by AVEVA Historian. Tiered AVEVA Historians can serve as a data repository for backup of critical information, consolidating data from diverse sites. They can also be used for bridging control networks (OT) and business networks (IT), providing access to detailed operational data that was previously inaccessible.

Data access and visualization is also ensured by our tiered AVEVA Historian redundancy approach. Connected instances of AVEVA™ Historian Client, automatically switch to a designated backup historian if the primary AVEVA Historian goes down. When the primary AVEVA Historian comes back online, all connected AVEVA Historian Client instances automatically switch back to the primary server.

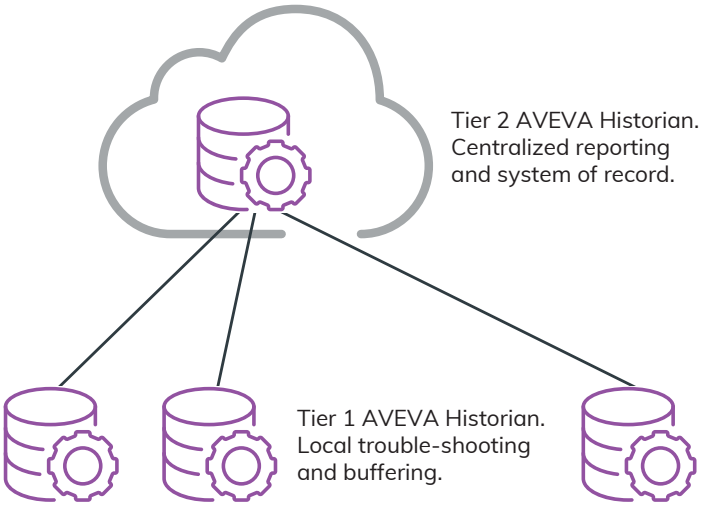
High performance features

Store plant data with amazing speed and remarkable efficiency

AVEVA Historian captures plant data hundreds of times faster than a standard database system and saves data in a fraction of the space using our history block technology.

"The AVEVA Historian storage engine uses only 2% of the disk space the same volume data would require to be stored in a traditional relational database."

Because of the differences between time series information and conventional transactional data, conventional relational database technology is often not suited to the plant-floor environment. AVEVA Historian is designed to manage the continuum of values experienced in time-series data, along with alarm and event data, providing a single data repository for your operational records. Our storage engine uses only 2% of the disk space the same volume data would require to be stored in a relational database. This means AVEVA Historian can capture very high resolution data on a large number of data tags ensuring you have the data you need to understand and solve the most difficult process and equipment problems.



Tiered architectures guard against possible data loss and provide valuable summary data for system performance analysis.

AVEVA Historian combines front-end, high-speed data collection with time series extensions to an embedded Microsoft® SQL Server® relational database to optimize both storage and retrieval performance. AVEVA Historian does not store data directly in Microsoft SQL Server tables, but instead utilizes highly optimized "history blocks" technology. This means that you don't have to purge your database as the size of your database grows – ever. You can move or transfer history blocks using Windows Explorer®. History block setup is improved so system management is easier than ever.

Additionally, our patented "swinging door" data storage algorithm greatly reduces data storage requirements while preserving important data features.

Capture complete data records, even from slow or intermittent networks

AVEVA Historian captures the complete data record (process, alarm, events) with its fault-tolerant data acquisition system. It is ideal for SCADA, geographically dispersed facilities or other applications that use slow or intermittent data networks. AVEVA Historian can acquire and store data collected by remote terminal units (RTUs), providing more complete data records for SCADA operations.

Transform data into useful information with advanced retrieval modes

AVEVA Historian has built-in advanced data retrieval modes that help you easily transform your data into meaningful, actionable information. AVEVA Historian makes data report queries easier to build, more efficient and more powerful with the following advanced data retrieval modes:

- **State Summary** data summarizes the states of a tag value. State Summary simplifies the analysis of process variables with a limited number of states, such as a machine's state of running/starting/stopping/off or a string that represents a downtime reason.
- **Analog Summary** retrieves summary data to regularly track your plant's productivity. You can use a variety of available summary statistics, such as:
    1. Time-weighted average
    2. Standard deviation, and
    3. First, last, minimum, or maximum value for a timestamped period
- **Integral** helps you convert a rate into a quantity, such as totalizing a flow. For example, you can answer questions such as "How much orange soda did we bottle yesterday?"
- Use **Counter** to calculate production rates and totals or keep track of how much liquid or gas a process uses.
- **Round trip** enables you to analyze cycle time or calculate periodic downtime. Quickly find answers to questions like "How long does it take between starting to fill one bag and starting to fill the next one?" or "What is the mean time between failures for my operation?"
- **Optimistic Retrieval** helps you fill data gaps in case of interruptions. You can use this feature to make a "best guess" for information lost because of a communication failure between equipment and the application server.
- **Summary Statistics** can give you key information for
    1. A set of tags grouped by batch, or other unique event
    2. By state (one per occurrence), or
    3. Overall summary statistics for a state (across multiple occurrences) Easily find information such as: peak temperature by batch, average flow rate each time a pump was running, total flow while a valve was open, amongst others.
- Other data retrieval modes include:
    - Slope
    - Interpolated
    - Best fit
    - Cyclic and delta
    - Full
    - Value state
    - Round trip

History replay

The history replay feature allows any process graphic hosted in the AVEVA InTouch HMI industrial visualization platform to easily be redirected from real-time data to historical data for improved analysis of your process through the SCADA Playback feature.

Choices for data analysis and reporting

Being able to use data is just as important as storing it. AVEVA provides many ways to access and visualize your process data. AVEVA Historian Client provides a great desktop tool for viewing data trends and basic reports. AVEVA™ Historian Client Web is a browser client for quick data query and trending. Intelligence leverages Tableau® business analytics for powerful self service process analysis capabilities. Dream Report is a configuration based reporting application that anyone can use out the box to create production or regulatory compliance reports. AVEVA™ Insight makes information accessible through the cloud for any modern browser or mobile device, allowing you to monitor your critical information, KPIs, and alerts on-the-go.

AVEVA has all your data analysis and reporting needs covered.

Data in the Cloud

AVEVA Insight is a simple SaaS solution that can save money and resources. It can be a cost-effective solution for small applications, reducing the total life cycle cost.

Whether you are looking to move your industrial data storage to the cloud as a managed Software as a Service (SaaS), or to complement and extend existing on-premises investments, AVEVA Insight is an affordable option.

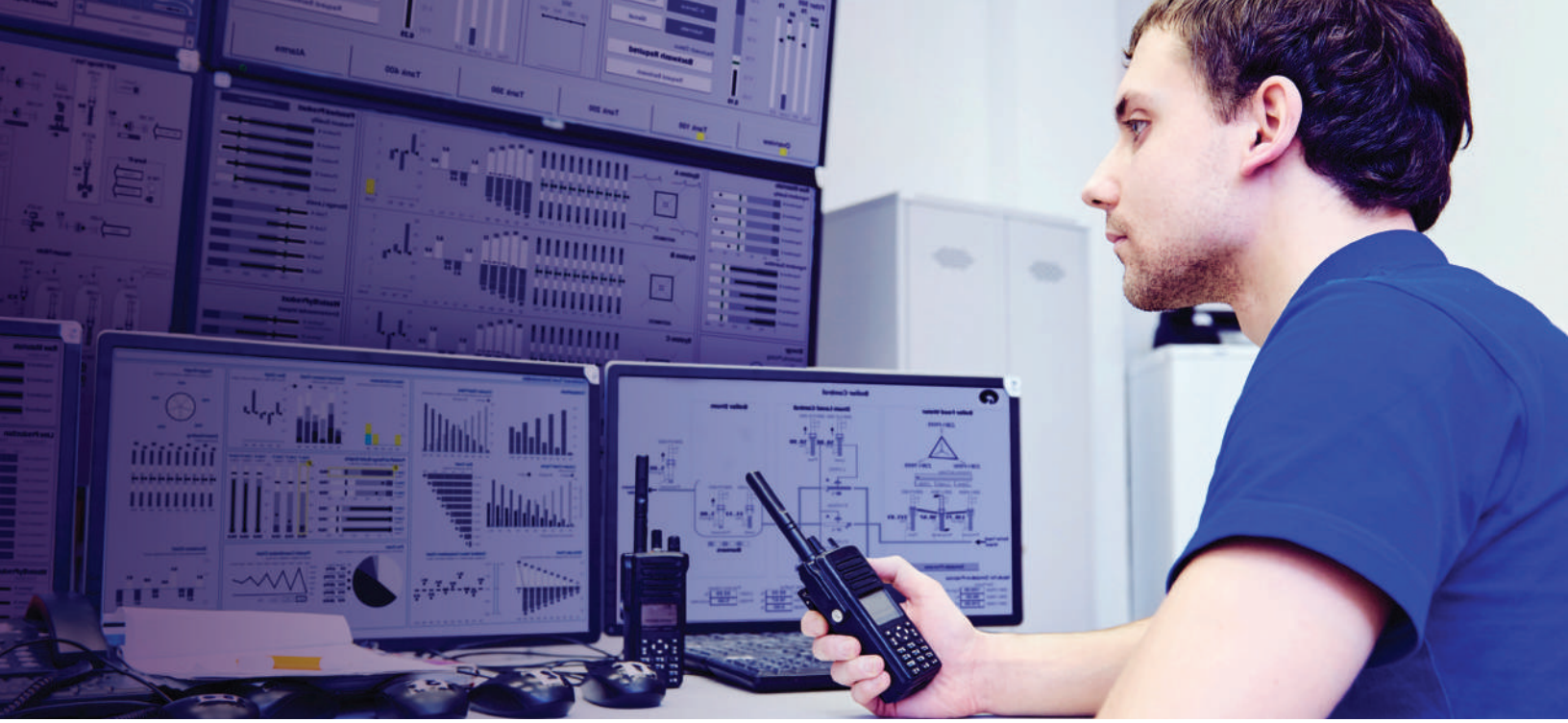
For customers wishing to host their AVEVA Historian architecture in the Cloud, AVEVA Insight makes data accessibility and analysis simple. Anywhere, anytime and on any device.

Another feature enabled by AVEVA Insight is the ability to send key data to a mobile device. This allows users to access KPIs on the go and create personalized alerts. Do you want to know when the line has stopped for more than five minutes? What about a critical asset that is in a high temperature state? Simply ask the question and get the answer.

Customer support and services

The Customer FIRST Services Program makes it easy to receive the latest AVEVA software and associated applications. To learn more about this valuable program, which maintains and often increases the value of your industrial software applications, please contact your local sales representative.

Discover how industrial information solutions such as AVEVA Historian and AVEVA Insight can benefit your business. Contact your AVEVA distributor today, or visit sw.aveva.com/asset-performance/industrial-information-management

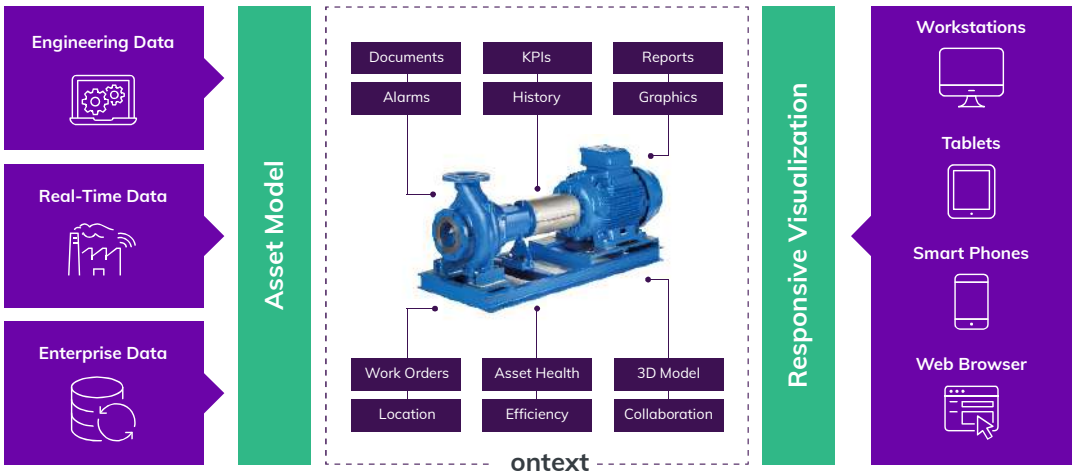


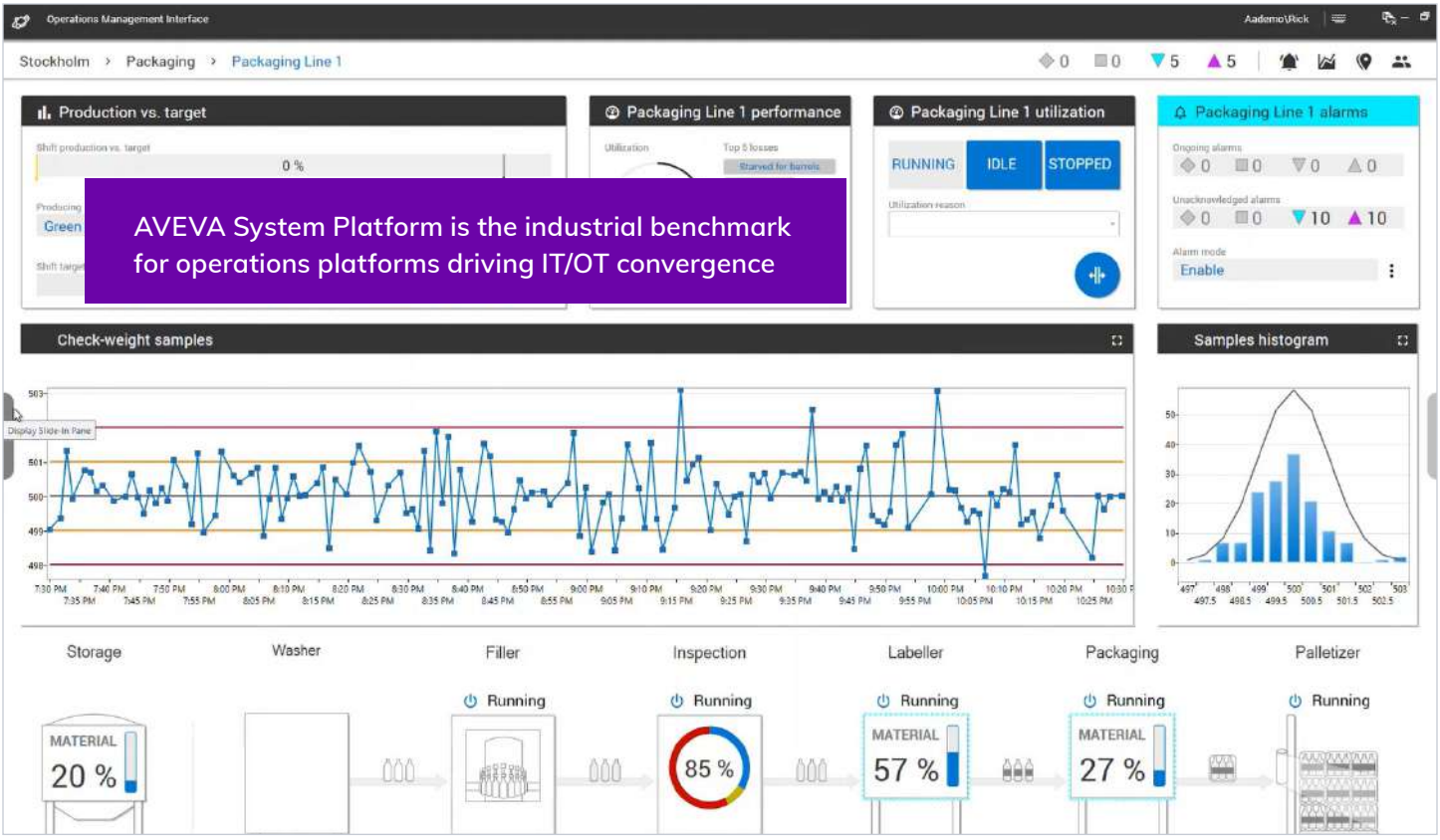
DATASHEET

AVEVA™ System Platform

formerly Wonderware

AVEVA System Platform with Operations Management Interface (OMI) is the world's only responsive, scalable solution for supervisory, advanced SCADA, MES, and IIoT applications that contextualizes operations processes across the organization. AVEVA System Platform provides a collaborative, standards-based foundation that unifies people, processes, and assets across all facilities for continuous operational improvement and real-time decision support.





Overview

AVEVA System Platform's Operations Management Interface (OMI) brings a responsive operations visualization framework to industrial organizations seeking an innovative new way to build rich, modern user experiences across all device formats through context-aware and reusable content. Offering powerful experiences for both engineers and operators, AVEVA System Platform provides the foundation for a truly effective performance management system that reinforces positive outcomes. Achieve up to 80% reduction in engineering effort to create applications using templates, objects, and out-of-the-box content, and expand your operator situational awareness, increasing effectiveness up to 40%, by identifying and resolving abnormal situations five times faster than traditional HMIs.

At-a-glance

- Powerful context-aware UI/UX visualization framework
- Multi-client deployment with desktop, browser-based and remote accessibility
- Single sign-on and authentication, using AVEVA Connect, or third-party provider
- Standards-based design techniques utilizing objects and templates
- Unique centralized deployment with native redundancy
- Comprehensive automation object and graphics library
- Extend your operations platform with additional AVEVA and 3rd party software
- Hardware agnostic that works with any PLC, RTU or PAC
- Complete scalability – unlimited IO, unlimited clients
- Most secure industrial platform with node-to-node TLS encryption

Industry-leading engineering

Responsive development

Easily create the optimal user experience across multiple form factor display devices from big screen monitors to smartphones.

Create sustainable applications

Standardize the use of templates and change propagation to build and maintain applications sustainably and maximize reusable engineering.

Dynamically build applications

By using new smart navigation capabilities and layout configurations, you can use your plant model to automatically link content.

Simplified development experience

Object wizards create versatile templates that adapt based on a device's configuration. Symbol wizards standardize custom configuration options like graphical elements, scripts, or custom properties and automatically assemble them into a single composite symbol.

Collaborative application development, design and testing can be done in the cloud or on-premises to enable teams of engineers to work concurrently and remotely on the same application at the same time.

Most comprehensive out-of-the-box content

Leveraging pre-built application content, you can save time, reduce development costs, and reduce time to value compared to custom configurations.

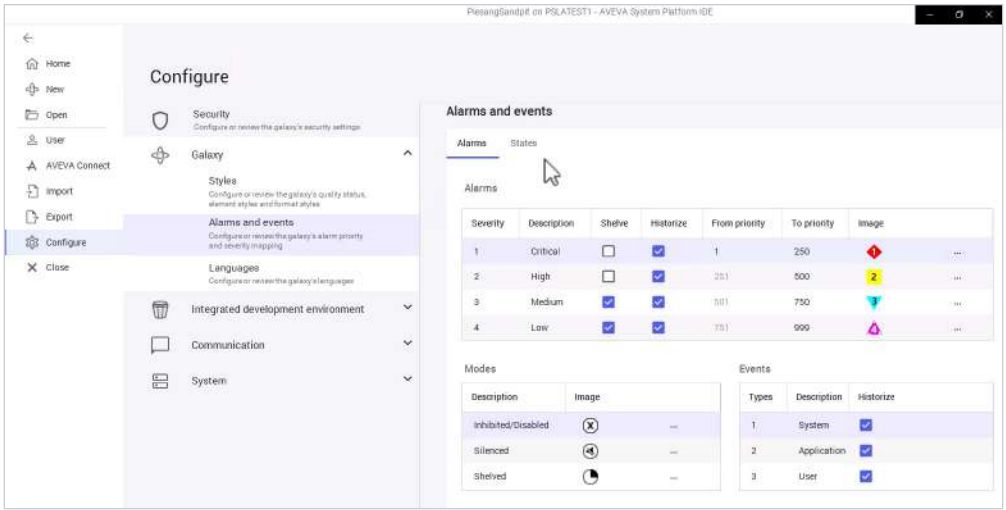
WYSIWYG

Use the device simulator and preview modes to build, test, and optimize any monitor configuration or content to perform on every display screen, regardless of resolution. You can even test multi-monitor configurations without physical access to the monitors themselves.

Communications for any device or system

Expand connectivity and increase the value of data by leveraging real benefits from the IIoT, big data, and cloud technologies.

- Support for OPC-UA, MQTT, DNP3, Modbus, and IEC 60870 protocols.
- Support for many PLC brands, including Schneider Electric, Allen-Bradley, GE, Siemens, Automation Direct, Bosch, Eaton, WAGO, Beckhoff, BACnet, Texas Instruments, Mitsubishi, Omron, and Opto 22.
- Auto-build capability expedites engineering efforts by reading the structure of a PLC program and automatically building templates and instances based on the PLC schema.
- Secure encrypted communications



Industry-leading engineering

Empower operators with situational awareness

- Deliver immersive control applications that weave context throughout the visual design, including situational awareness concepts for improved operator performance.
- Quickly navigate displays following intuitive and modern UI/UX design techniques, pop-out slide panels, and multi-level window structures.
- Uncover new insights and training opportunities by reviewing historical activity through the historical playback capability – no scripting or configuration necessary. Just hit play.
- Apply geographical perspectives to decision- making with the Map OMI App, enabling operators to become more aware of geographically distributed assets.
- Centralize access to non-traditional information sources such as work orders and team collaboration to bring greater context to process-centric views.
- Increase usability across devices with multi-touch and gesture controls such as panning, zooming, and declutter mechanisms.
- Automatically calculate statistical summary process data (i.e. maximum, minimum, average, etc.) in real-time without any coding.
- Capture the “best operator” in the system to reduce operator strain and expedite on-boarding for new operators.

Intelligent alarming supports productivity

Maximize the use of advanced alarm management capabilities like state-based alarming, alarm suppression, alarm shelving, alarm grouping, and aggregation to identify and filter out nuisance and “bad actor” alarms based on severity to maintain focus on the most relevant process information, reducing operator distractions and fatigue.

Inclusive process historian

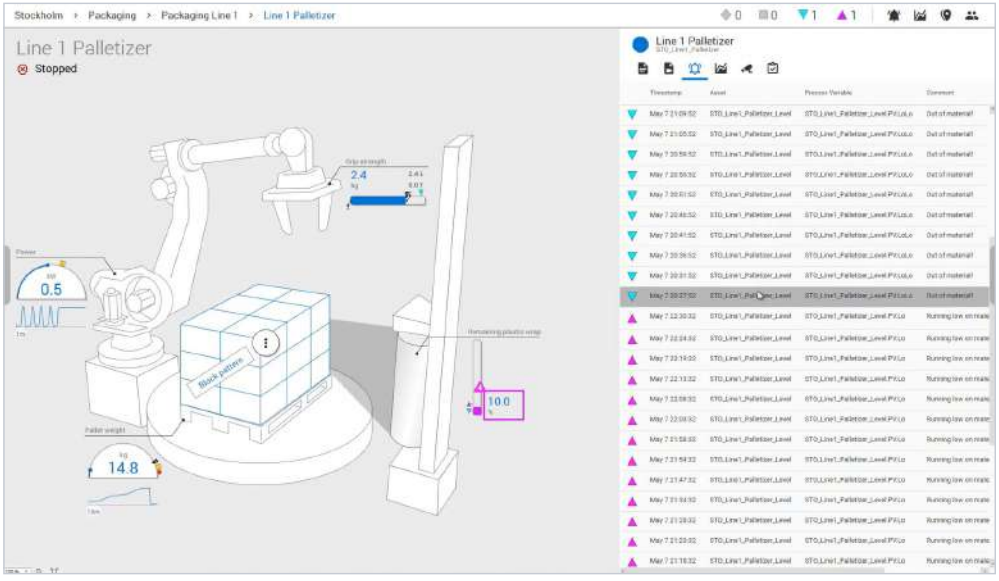
Unlike conventional relational databases, AVEVA Historian handles time-series data, as well as alarm and event data. Unique “block technology” captures plant data hundreds of times faster than a standard database system and utilizes a fraction of conventional storage space.

Capture everything on time

Manage low bandwidth data communications, late coming information, and even data from systems with mismatched system clocks, ensuring high resolution data is captured accurately every time.

Analyze complex trends

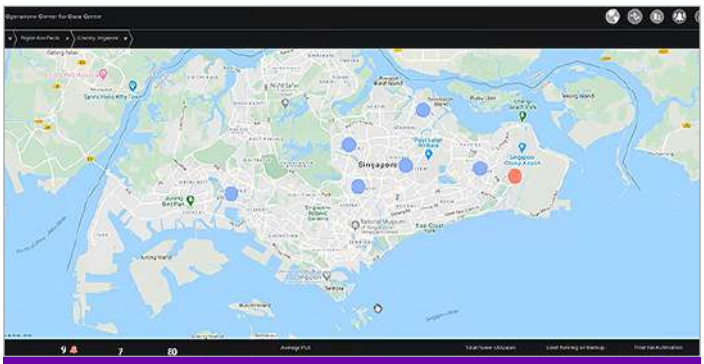
Process one year of historical data in less than a second to facilitate troubleshooting, identify inefficiencies, and eliminate the time-consuming activity of locating data using AVEVA Historian Client’s powerful trend, query, and reporting tools.



Amplifying the operations platform

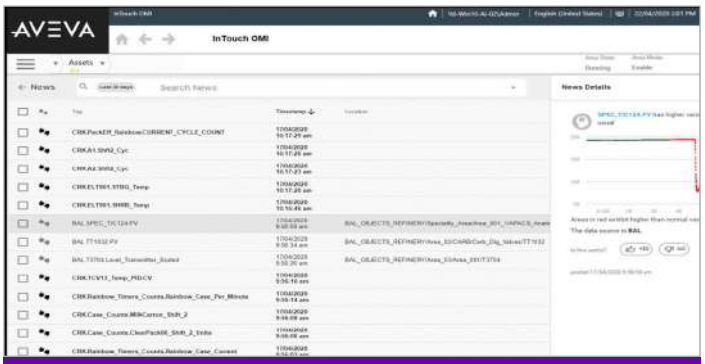
Visualize more with OMI Apps

OMI Apps are extensible capability that can be incorporated into displays to provide enhanced functionality for specific use cases. The growing library of apps are available from both AVEVA and nology partners.



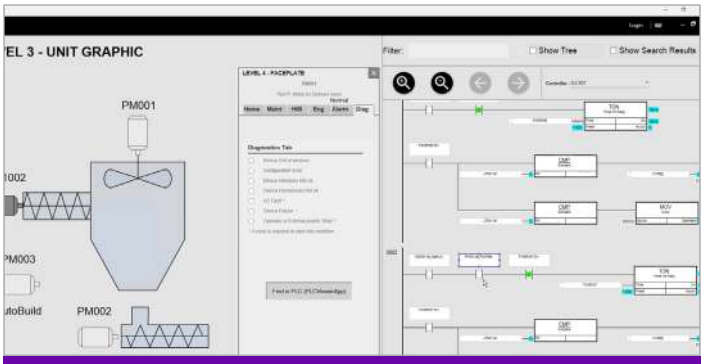
Map OMI App

Offers geographical contextual presentation which enhances the model-based navigation.



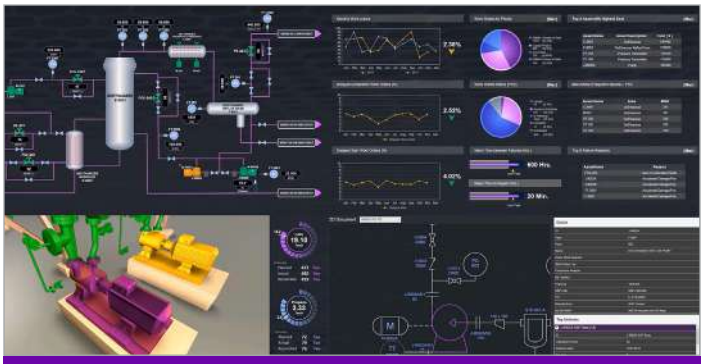
AVEVA Insight OMI App

Builds artificial intelligence into the context of real-time decision making.



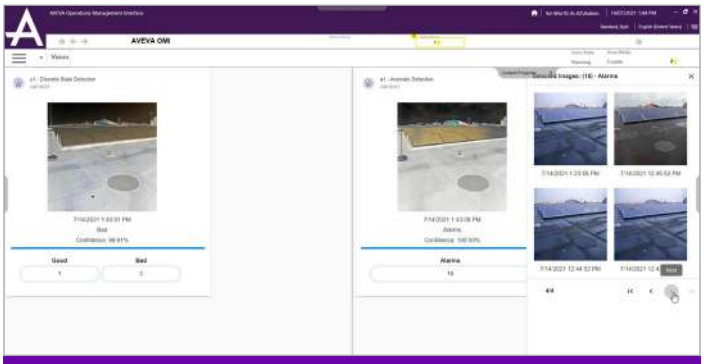
PLC Viewer OMI App

Empowers operators to troubleshoot PLC logic and execution in real-time.



3D Viewer OMI App

Renders 3D models of assets contextually for alarms, alerts, and status changes.



Vision AI Assistant OMI App

Monitor real-time image streams and provide anomaly alerts and notifications to operators.

Graphic Repeater OMI App

Repeat selected symbols for similar datasets in a variety of patterns.

Integrate with AVEVA and partner software

AVEVA System Platform is the ideal open standards-based foundation that interfaces to countless software systems and services, including AVEVA's broad portfolio of operations software.

AVEVA™ Teamwork

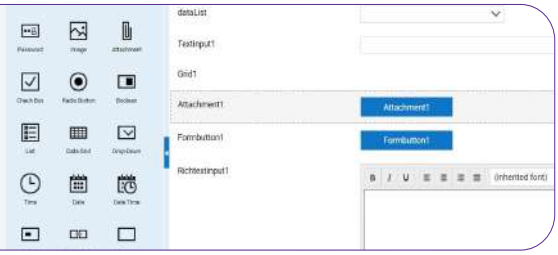
SaaS application for skills development, knowledge sharing, and collaboration management across facilities and teams

AVEVA™ MES, Batch and Recipe

Leading MES software for CPG manufacturing with integrated production, inventory and quality operations management capabilities

AVEVA™ Work Tasks

Digitize work and data collection procedures to connect workers assigned tasks and instructions on mobile and desktop devices



AVEVA™ PI System™

Enterprise-class information management system for aggregating, enriching, analyzing, and using operations data

AVEVA™ Insight

Self-service dashboards and customizable alerts for optimizing operations and OEE using process analytics

AVEVA™ Predictive Analytics

AI-powered predictive maintenance software to maximize asset reliability and prevent unplanned downtime

Future-proof investment

Architectural flexibility

Easily scale as your operations grow, from a single box system to client-server to multi-tiered deployment, without re-engineering the solution. AVEVA System Platform was designed to expand and change over time to accommodate shifting needs, including the ability to distribute the system across multiple servers for maximum uptime and redundancy.

The best of all worlds: On-premises, cloud, and hybrid

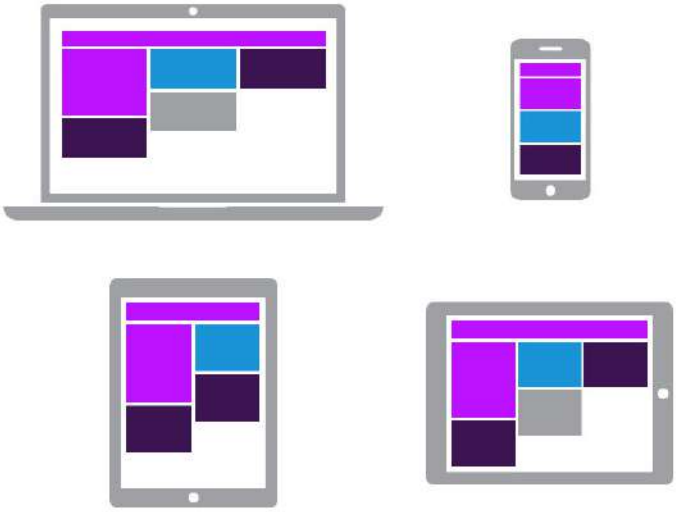
AVEVA System Platform supports a mix of on-premises and cloud-based applications for the most pragmatic and flexible approach to real-time control and actionable insights that suits your needs.

Maintain a healthy system

Enable continuous proactive monitoring of your system's health, performance, and availability. AVEVA System Platform greatly mitigates the risk of application downtime by making incremental changes on the fly and manages system patches centrally by downloading and pushing updates directly to networked machines.

Multi-device experience

Configure applications once and deploy actionable content anywhere on any device.



For more information on
AVEVA System Platform, please visit:
aveva.com/en/products/system-platform

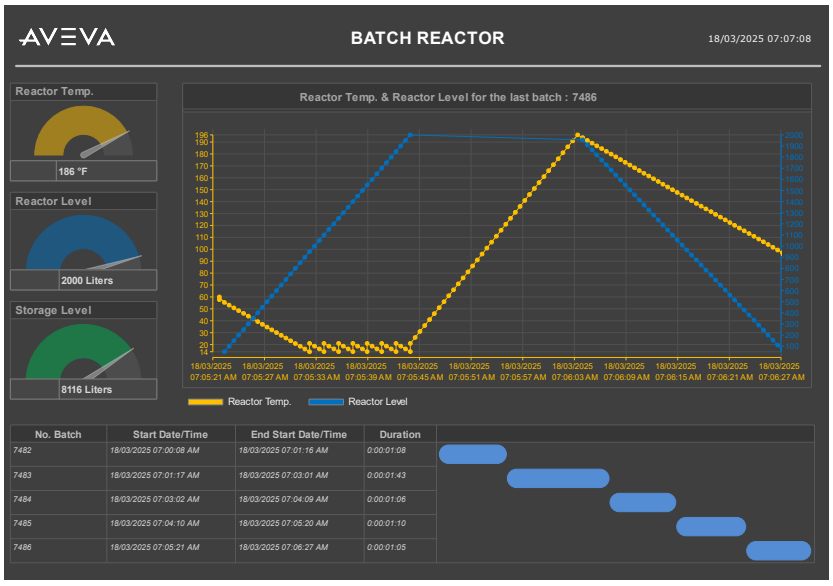
DATASHEET

AVEVA™ Reports for Operations

The leader in industrial reporting technology

User-friendly reporting software for automation

AVEVA Reports for Operations is an award-winning software solution for compliance and performance, reports and dashboards. It has become the industry standard. If you're still using Microsoft Excel, SAP Crystal Reports or Microsoft SQL Server Reporting Services (SSRS) for your automation-related reports and KPI dashboards, then it's time to explore AVEVA Reports for Operations.



Batch Reactor

New features

- Batch manager with support for nested batches/phases
- Report clusters – Set of graphical objects organized in “clusters”, to be used in reports for dynamic batches and phases representation
- e-Signature workflow – this feature allows project administrators to set an order for report signees
- Communication drivers
  - New AVEVA PI event frames driver for communicating with PI event frames database
  - New AVEVA PI alarms HDA driver for communicating with PI event frames / asset framework database
  - WinCC Alarms CSV importer
  - MQTT real-time driver
- XML report output format
- API toolkit for connector plug-in development

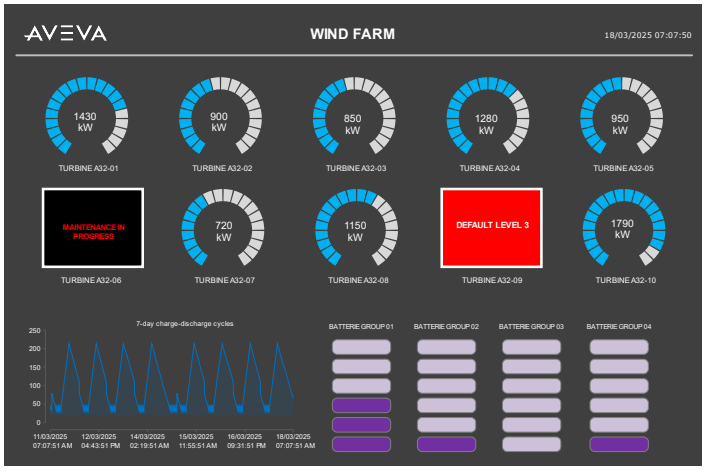
Custom display objects

Centralized advanced visualization and time definitions

With a user-friendly designer studio you can create and manage visualization conditions and time schedules in one place and reference them throughout your report objects or project. Being able to make changes in one place and referencing conditions makes system-wide updates a quick, straightforward process while significantly reducing development time and errors.

Custom display objects

A new object builder lets users expand the graphics set with their own display objects. New objects are easily applied by anyone, through standardized configuration menus.



MQTT driver

In the internet of things era, the most common protocols for data access are OPC UA and MQTT with JSON Messaging. AVEVA Reports for Operations supports both protocols to access IoT, IIoT, and Industry 4.0 device data with a new configurable MQTT driver as well as an OPC UA driver.

Security for industrial applications

User management:

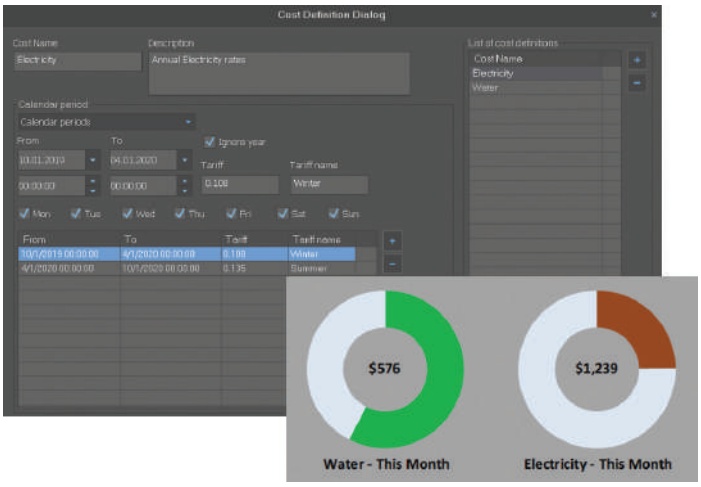
- Local or Windows-integrated user management
- Record all user activities into a database supporting Windows local or/and domain users and user groups
- Extended user access control to reports and modules
- Localized language by user or group

Audit-trail recording

- Record all user activities in a database

Version control

- Secure version ID stamp on reports
- Ability to roll back to the specific (certified) report version
- Track user changes in a secure database



Rate and tariff calculations associated with meter readings

Electronic signatures

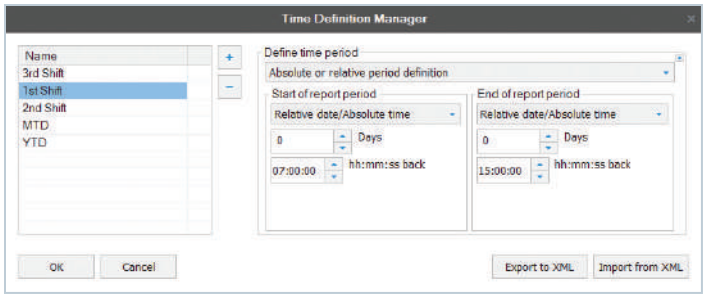
- E-sign PDF reports
- Web-based signing tool

XML report output format

XML (Extensible Markup Language) is an ideal solution for data transfer, providing both a human and machine-readable format. AVEVA Reports for Operations can now automatically generate reports in XML format for integration with other systems, typically automation and regulatory-related.

Cost calculator

Automated cost calculations require the use of schedules and variables to determine the proper costs to use at any moment in time. AVEVA Reports for Operations supports a very powerful cost calculation engine, enabling it to be an ideal solution for any billing or cost allocation application.



Centralized advanced visualization and time definitions