

ActiveFactory 9.0 for InFusion Real-Time Analysis and Reporting Software for Production and Performance Management

INFUSION[™]
 Enterprise Control System

AVANTIS • FOXBORO • SIMSCI-ESSCOR • TRICONEX • WONDERWARE

BENEFITS

- ▶ Improve production efficiency by leveraging timely and accurate data
- ▶ Proactively enhance plant profitability by taking action on information in real time
- ▶ Leverage users' existing Microsoft software
- ▶ Create queries and run reports even by users who have no SQL database knowledge
- ▶ Simplify regulatory compliance with automated up-to-date reports



The InFusion ECS is the world's first Enterprise Control System — a new class of system that goes beyond traditional operational control to deliver true enterprise control. It is the first system that spans all traditional automation and information domains and integrates all of today's process automation and information systems, regardless of supplier or generation, as one business environment. This capability enables a more collaborative environment and a greater level of agility for detecting and responding to unanticipated problems.

As an enabling platform for Asset Performance Management (APM), the InFusion ECS extends closed loop control throughout an organization delivering increased visibility throughout the enterprise; unprecedented, affordable integration; incomparable productivity; and an intelligent foundation for business optimization.

Invensys brings together world-class technologies and know-how, balancing asset availability and utilization to maximize the economic value of all plant assets, to deliver true APM.

By providing the right information to the right people in the right context at the right time, the InFusion ECS can empower everyone in an enterprise—from executives to the plant-floor operator.

EFFECTIVELY MANAGE PRODUCTION PERFORMANCE ANALYSIS AND REPORTING

Leading manufacturers constantly strive to improve plant performance because they know that increased plant efficiency can significantly boost profitability. By providing outstanding process trend analysis, ActiveFactory[®] 9.0 for InFusion[™] software can empower these forward-thinking industrialists to achieve higher profits, better plant performance and a more astutely managed plant.

Version 9.0 of ActiveFactory software was developed using the ArchestrA[®] industrial software architecture. The ArchestrA architecture leverages Microsoft's newest software technologies: .NET and ASP.NET. By tightening integration, these technologies enable system developers to create some of the most advanced industrial applications in the industry while concurrently minimizing development costs and shortening project schedules.

HIGHLIGHTS

- InFusion plant data reporting and trending client
- ArchestrA technology
- Most complete integration with the InFusion Historian server
- Powerful library of ActiveX and .NET controls
- Powerful and easy-to-use query tool
- Enhanced web security
- Batch analysis tools
- SFDA-validated applications supported

IMPROVE BUSINESS EFFICIENCY WITH ACTIVEFACTORY FOR INFUSION

Visualize underlying plant process data with the Trend tool and use the Query tool to retrieve blocks of related information in a point-and-click environment. No SQL skills are required. ActiveFactory for InFusion can help plant personnel answer questions such as:

- When the process disruption occurred on Line #1, what time did it start and did it affect total line output?
- How long has that equipment been out of service?
- How does this batch compare to our baseline batch?

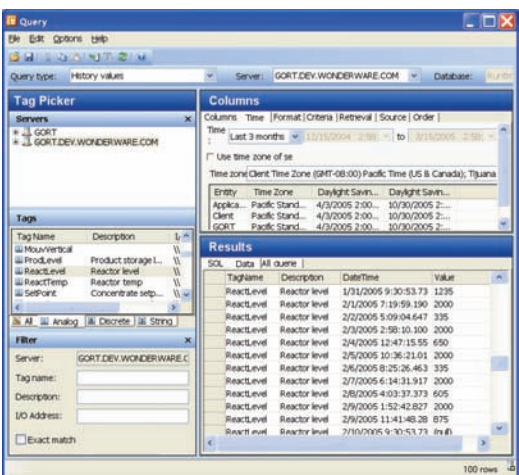
Analyze important plant processes by quickly adding real-time and historical process data. Data analysis and the creation of graphs and reports empower plant staff to quickly zero in on the root causes of costly process problems to answer questions such as:

- What has the average temperature been over the last two hours?
- Does the reduced output from Line #1 justify keeping it online?
- What are the differences in production between our three shifts?

Optimize plant processes by sharing knowledge and acting on information and detailed data trends. Plant staff will be able to answer questions such as:

- Could the potential windfall from Line #2 compensate for the reduced output from Line #1?
- At the end of the last shift, was the effluent temperature so close to regulatory limits that it required round-the-clock surveillance?
- Can the switching operation be shortened, saving valuable production time?

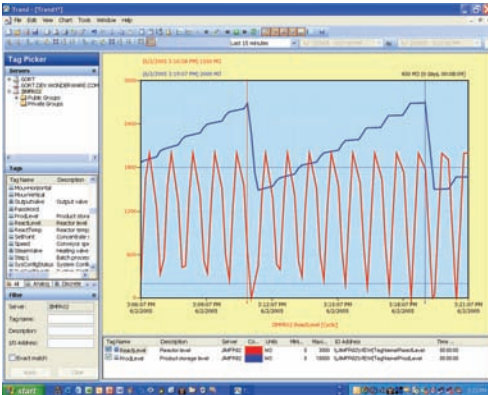
Easily publish data trends and plant performance management reports to the Internet via SuiteVoyager® Web analysis software or the standalone ActiveFactory Web Server. The software offers fully specialized reporting and hence systems are no longer needed — saving time and money.



ActiveFactory for InFusion Query provides powerful database querying capabilities and requires no knowledge of SQL.

With ActiveFactory trends and reports, plant staff can answer questions such as:

- How many times has the motor been started? Is it ready for maintenance?
- Can time be trimmed off the forming process to drive up the production rate?
- What is the production across shifts?
- How can the company prove to the manufacturer that the pump is still bad?
- Is the new process equipment delivering the forecasted ROI and specified performance targets?
- How does the new line compare with the older lines?
- If this month's domestic output exceeds plan, should the offshore activities be rescheduled?



ActiveFactory for InFusion Trend easily displays all types of InFusion Historian data, simplifying process analysis efforts.

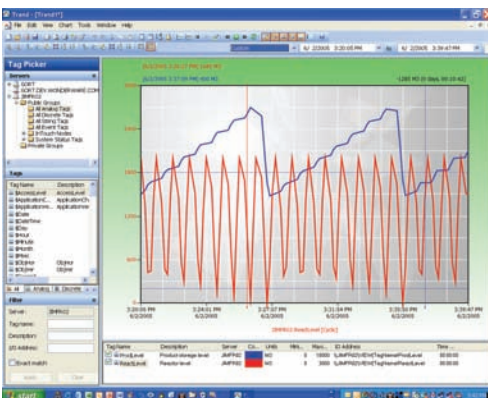
MOBILE SOLUTIONS

ActiveFactory for InFusion software supports the Microsoft Windows XP Tablet Edition operating system making it compatible with mobile PCs such as Wonderware industrial tablets and touch panel computers. With ActiveFactory for InFusion, mobile workers can access vital real-time and historical data anywhere in the plant — streamlining process troubleshooting and saving valuable time.

POWERFUL PROCESS AND PRODUCTION TREND ANALYSIS

Deliver real-time and archival traces of historian data in easy-to-understand charts that include analog, discrete, string or event data for notifying key personnel of significant plant process changes or incidents. Accelerate problem-solving and improve plant production awareness. ActiveFactory for InFusion trending capabilities meet the demands of process operators and engineers who troubleshoot or analyze processes by providing the following rich product features:

- Real-Time Trending — Live Mode: Click on the Live Mode button to select automatic — or “live” — updating of trend data, enabling real-time data analysis. Viewing live data trends has never been easier.



Create high-impact trend displays with powerful graphical configuration options.

- Precise Value and Time Analysis: Using two vertical time-axis cursors, easily view and compare precise values at different points in time. The ActiveFactory for InFusion Trend feature displays the value and time at both cursors and automatically calculates the time and value differences between cursor positions. Horizontal value-axis cursors make it easy to compare values across the trend interval. Easily customize the line style, weight and color of each cursor.
- Statistical Analysis: Easily access summary information about all displayed tags, including minimum and maximum values, the times associated with those values, average values, ranges, etc. Statistics can be calculated for the entire trend interval or for only the period between time cursors. Statistical data can be saved or printed.

- **Batch Analysis:** Drag and drop multiple incidences of the same tag onto a trend plot; then, apply time offsets to compare an older batch to a current batch.
- **Annotation:** Capture valuable process and operations data and store it with process data. This contextual information is invaluable for understanding plant performance and becomes part of the plant's data record — making future optimization and troubleshooting activities more efficient and effective. The Annotation feature automatically captures the user's name and the time and date of the entry.
- **History Replay:** Select a time period from the past and click on the Replay button, found on the toolbar, to play back the data as if it were live
- **Zoom:** To reveal even more detailed information, zoom into a portion of a chart by selecting a region of the chart or by decreasing the amount of time shown on the trend. Zoom Out and Undo Zoom can also broaden the time period.

EXTENSIVE, CONFIGURABLE PRODUCTION AND PERFORMANCE REPORTING

In today's competitive manufacturing world, every employee in the plant must get involved with improving performance. ActiveFactory for InFusion software enables this active participation by providing secure online access to sophisticated plant reports and data trends. Web-based reporting is fast, inexpensive and can reach a wide range of people — making it the ideal tool for engaging more employees in the plant performance improvement process.

ActiveFactory for InFusion reporting and data trends are fully integrated with the SuiteVoyager portal, which facilitates immediate access to vital plant information via an Internet browser. A wide range of critical plant information can be accessed using this software, including real-time and historical production data, key performance indicators (KPIs), real-time statistical process control (SPC) charts, equipment downtime information, overall equipment (OEE) effectiveness calculations, production traceability information, and batch management information.

All of this content can be delivered to anyone, anywhere in the world, and can be customized to each user's particular role.

Wonderware Chemical Company
Loke Forest Plant

Pump and Valve Analysis Report: Date: 4/14/2005

Total Pump Runtime in Hours by Shift:

Pumps	Shift - Day	Shift - Evening	Shift - Night
Transfer Pump	2,840.58 hours	3,027.75 hours	3,027.72 hours
Concentrate Pump	1,229.77 hours	1,306.33 hours	1,311.67 hours

Total Valve Operations by Shift:

Valves	Shift - Day	Shift - Evening	Shift - Night
Transfer Valve	442 operations	470 operations	450 operations
Concentrate Valve	442 operations	470 operations	450 operations
Steam Valve	441 operations	471 operations	450 operations
Water Valve	442 operations	470 operations	450 operations
Output Valve	54 operations	59 operations	52 operations

ActiveFactory for InFusion Report helps users create valuable plant data reports by leveraging existing Word skills and real-time and historical data within the InFusion Historian.

EASY REAL-TIME PRODUCTION DATA MINING

Easily and rapidly mine the data stored in SQL data sources. No prior knowledge of SQL is needed to access and analyze this information. Users can also designate Favorite Query types for easy access to commonly used or specialized queries.

The Query function dynamically generates and executes SQL queries based on criteria provided by the user in an easy-to-use, point-and-click interface. It includes a tag browser that finds and selects individual tags or entire public or private tag groups.

DATA-MINING FEATURES

- **Data Results:** Create highly useful data value queries. The parameters available for selection include Live Value, History Value, Summary Value, Time Running and Annotations. Data Formatting, Value Criteria, Time Range, Retrieval Mode and Data Source. Users can change tag selections, time periods and other query parameters. The Query function automatically reruns the query, providing instantaneous results.

- Tag Configuration: Tag configuration queries such as Tag Details, Number of Tags
- Tag Search easily exposes tag configuration data for review or modification
- Alarms and Events: Tag alarm and event queries such as Alarm History, Alarm Limits, Event History Values and Event Snapshot are available so that important tag alarms and events can be provided to plant decision-makers and problem-solvers.
- Database: Queries are also provided to enable easy system maintenance. Queries such as Server Version, Storage, Storage Size Available and Storage Start Date are available to system administrators to better inform them of system operation and performance issues.

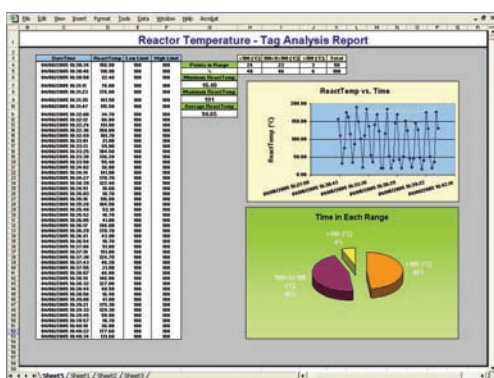
EXTENSIBILITY

ActiveFactory Control Objects

ActiveFactory for InFusion software contains a powerful library of component-based .NET and ActiveX controls for software developers and systems integrators. These controls integrate with Invensys container applications, such as InFusion View software, as well as third-party container applications, such as Microsoft's Internet Explorer and the Visual Basic development system. ActiveFactory for InFusion control objects were developed using .NET and C# software technology, enabling them to be seamlessly integrated into today's .NET-based custom industrial applications — saving significant development time.

Other Data Sources

Although ActiveFactory for InFusion software is designed to tightly integrate with InFusion Historian, it supports access to other data sources as well. As with Microsoft Query and other SQL query tools, a user can manually build and execute queries against other online SQL databases to take advantage of ActiveFactory formatting features. Users can view data from the InFusion Historian alongside data from other sources.



ActiveFactory for InFusion Workbook gives Microsoft Excel “point-and-click” access to IndustrialSQL Server data for reporting and analysis.

ACTIVEFACTORY AND OTHER INFUSION PRODUCTS

InFusion Historian — A Storehouse of Valuable Information

One of the keys to improved performance often lies hidden within the plant's rich storehouse of data. The InFusion Historian was developed from the Industrial SQL Server plant historian, which has been firmly established as the world's most popular historian for production and performance management since its introduction in 1997. More than 14,000 software licenses have been sold to leading manufacturers around the world. Thus, IndustrialSQL Server has captured trillions of vital details about plant operations, which empowers our global customers to improve production and performance management.

But how can all that data be transformed into valuable plant information and ultimately into better plant performance? By leveraging the combined benefits of ActiveFactory for InFusion software and the InFusion Historian, production and engineering personnel can harness real-time production data out of the box. Empowered with the right data, they can quickly and easily create rich, detailed real-time data analysis reports and share them across the manufacturing enterprise — significantly improving plant performance.

Share Vital Information with the SuiteVoyager for InFusion Portal

ActiveFactory for InFusion analysis and reporting software can also be combined with SuiteVoyager Web analysis software to provide the timely, accurate and diverse plant data needed to intelligently manage plant performance and improve operations. ActiveFactory for InFusion software does not require specialized training in order to generate and disseminate detailed real-time and historical plant process information. The SuiteVoyager for InFusion portal also integrates content to offer real-time traceability, genealogy, batch and SPC information, as well as downtime and OEE analysis.

The combination of SuiteVoyager for InFusion and ActiveFactory for InFusion software offers a variety of benefits:

- **Corporate Portal Integration:** Use the SuiteVoyager for InFusion portal to expose valuable plant data within SAP's mySAP CRM, Microsoft SharePoint servers and other corporate portals.
- **Personalized Navigation:** Manage lists of published reports using the SuiteVoyager for InFusion portal's navigation panel. SuiteVoyager software empowers the user to control which ActiveFactory content is available to each user.



ActiveFactory for InFusion software provides valuable real-time data analysis and reporting data to SuiteVoyager for InFusion Web analysis software.

- **Embedded Trends:** ActiveFactory for InFusion Trends can be exported and embedded within InTouch® applications and included in SuiteVoyager for InFusion views. SuiteVoyager for InFusion software provides complete control over which ActiveFactory for InFusion Trend plot functions users can access — from cursors and scaling tools to controlling which tag data can be shown.
- **MultiViews:** Create KPI dashboards of ActiveFactory for InFusion Reports and Trends within a SuiteVoyager for InFusion MultiView window, which can display Web parts such as .asp and .html files.
- **Delivery Across Firewalls:** ActiveFactory for InFusion software can deliver vital plant information across firewalls from the plant floor to the enterprise, without compromising the security of either system. Within a local network, where direct connections to the InFusion Historian are generally supported, iTrend's full analysis capabilities may be available. In more restrictive environments, static trends are displayed.

ACTIVEFACTORY AND MICROSOFT OFFICE

Leverage Your Employees' Existing Skills

ActiveFactory for InFusion software's Microsoft Excel and Word add-ins can be ideal for developing standard or ad-hoc plant performance reports and for data analysis. Create useful reports, such as those that list all operator notes from the last shift or the peak temperature from each batch. Training requirements for plant personnel are minimized by leveraging existing Microsoft Excel and Word skills.

Also, Microsoft Excel's powerful customization options enable non-technical personnel to create rich plant reports, maximizing your return on investment. ActiveFactory for InFusion software supports the latest versions of Microsoft Word and Excel software — providing the most up-to-date reporting functionality.

Active Factory for InFusion add-ins combined with Microsoft Word and Excel functions enable tight integration to the InFusion Historian. Functions include the following:

- **Tag Search:** Quickly search for tags from connected InFusion Historian or Wonderware Historians. ActiveFactory for InFusion software can connect to multiple InFusion or Wonderware Historians, enabling access to process data for the purposes of reporting and analysis.
- **Data Values:** Add InFusion Historian tag data to an Excel workbook by simple point-and-click operations. Live historical and aggregate data from the InFusion Historian can be made available and refreshed via the Refresh Sheet function.
- **Query:** ActiveFactory Queries can be embedded into Microsoft Excel workbooks.
- **Functions:** Data functions can be converted, edited and refreshed via point-and-click operations.

SPECIFICATIONS

Compatible Operating Systems

Microsoft Windows XP Professional
Microsoft Windows XP Tablet Edition
Microsoft Windows 2003 Server

Compatible Microsoft Office Suites

Microsoft Office XP

RECOMMENDED HISTORIAN

InFusion Historian, Version 9.0 or higher, Standard and Enterprise Editions

Recommended Web Analysis Software

SuiteVoyager software, Version 2.5 or higher

Browser

Microsoft's Internet Explorer, Version 6.0 or higher



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