



## rapidHistorian™

### *The Advanced Process Data Historian Solution*

As engineering and manufacturing firms endeavor to effectively manage internal processes, control overheads and tighten product to market timelines, external factors such as industrial regulations and increased competition are testing their ability to succeed.

Automsoft believes these firm's historical process data can hold the key to long-term success. By centralizing and studying plant-wide process data, corporations can reveal new levels of strategic understanding, refine processes, manage costs and enhance decision-making to successfully respond to challenges.

#### About Automsoft

Automsoft is one of the world's premier providers of advanced data historian and process optimization solutions. Automsoft's rapidHistorian™ and nuaViews™ product suite enables powerful and secure high-speed data retrieval, vast storage capacity, complex analysis and sophisticated visualization. Founded in 1997, Automsoft has a global customer base of thousands of installations across diverse industrial sectors including Power & Utilities, Renewable Energy, Maritime, Manufacturing, Life Sciences and Oil & Gas.

Today, Automsoft is at the cutting-edge of 'cleantech' solution development enabling advanced meter data aggregation, smart grid integration and smart building management.

Automsoft has international offices in the US, Europe, Middle East & Asia. For more information, please visit <http://www.automsoft.com>.

# Introducing rapidHistorian™

Automsoft's rapidHistorian™ system is a robust suite of powerful data historian, information management and analysis applications designed to collect, analyze and serve large volumes of process data. rapidHistorian delivers market leading data processing capabilities through its high speed distributed database.

rapidHistorian is at the heart of the enterprise, empowering businesses to achieve sustained process improvement and collaborative decision-making. rapidHistorian enables businesses to achieve a closer alignment of actual output and strategic goals and meet Key Performance Indicators.

Sectors benefiting from Automsoft solutions include:



The rapidHistorian family of applications, founded on Automsoft's core rapidHistorian technology, includes:



## rapidHistorian Benefits

- **Standardize enterprise data** visibility by enabling network-wide access to a single, centralized store of both real-time and historical process data.
- **Predict & improve process outcomes** using rapidHistorian's trending, analysis and modeling capabilities.
- **Meet rigorous regulatory requirements** using rapidHistorian's process management, user authentication and auditing features.
- **Reduce operating costs** (materials, resources, assets) through effective process, asset and workflow management.
- **Accelerate** product time to market through ongoing process, batch and asset review and improvement.
- **Enable fast enterprise collaboration & decision-making** through shared process intelligence and reports available from any network location.
- **Avoid expensive asset or process downtime** through ongoing asset and process monitoring and maintenance.
- **Extend asset and IT system longevity & ROI** through continued maintenance, condition-monitoring, OEE analysis and rapidHistorian's open system interfacing.
- **Enhance business intelligence** by integrating comprehensive process data into external business systems (e.g. SAP, SharePoint).

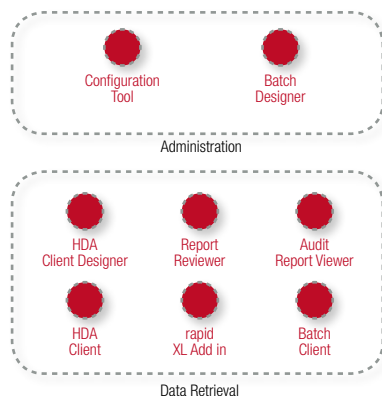
## rapid

### Technology Highlights

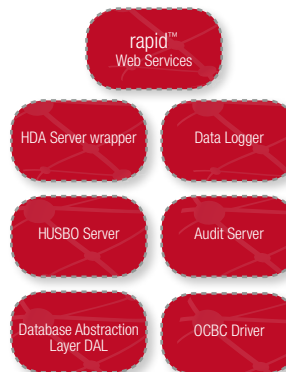
- > High-speed lossless data compression
- > High performance distributed object-oriented architecture
- > Fault-tolerant 99.999% Network and Server High Availability
- > N-tier, Client/server and SOA architecture
- > Web based Reporting, Trending and Visualization Tools
- > OPC Compliant (HDA, DA, UA, A&E)
- > Multiple data source compatibility (ODBC, OPC, OLE/DB, ADO.NET, SQLServer, Oracle & web services)
- > Multiple data types (Time series data, Alarm and Events, Batch (ISA 88), Binary (i.e. documents, media, digital signatures))
- > Open and interoperable n-tier distributed architecture
- > Microsoft Windows family hosted Client & Server components (XP, 2003, 2008)
- > OPC server redundancy and caching
- > VMware and vSphere support
- > Digital Signature support
- > Secure Audit Database & User Authentication

## rapid 3.0 System Architecture

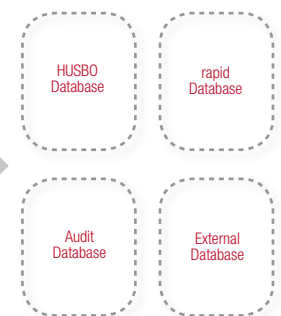
### rapid GUI Applications



### Server Components



### Database Components



## Key rapidHistorian Features:

- **Powerful distributed data historian:** rapidHistorian is an open, vendor-neutral historian capable of data capture from advanced process, batch, alarm & event and binary data sources. rapidHistorian's high-speed data retrieval and storage capacity means virtually unlimited volumes of data can be processed and archived.
- **Real-time plant monitoring & asset management:** Shop floor engineers to head office executives can access real-time dashboard views of plant asset performance, view and monitor outputs and manage controls helping to ensure process uptime and minimize faults.
- **Enterprise data configuration & management:** Users can quickly configure rapidHistorian to aggregate and store plant-wide data contained within disparate control system databases. Users can easily define asset groups and hierarchies, connect sets of data, configure management rules, apply calculations, specify presentation formats and add any number of data sources as required.
- **Centralized reporting and visualization tools:** rapidHistorian's powerful report template dashboard enables users to quickly build, schedule, export and archive batch, process and alarm & event reports for one or more plant data sources on a batch or continuous basis. rapidHistorian's XL add-in gives users Microsoft Excel-based querying. Reports can be exported to third party documents or applications.
- **Calculation Engine, root cause analysis & predictive modeling:** Control Engineers can use rapidHistorian's Calculation Engine to study historical data, analyze variables and predict outcomes using the tool's inbuilt calculations. Engineers can use analysis intelligence to adjust plant asset constraints to achieve optimum targets.
- **KPI monitoring & OEE analysis:** Data retrieved and archived by rapidHistorian can be swiftly exported to enterprise business systems such as MES and ERP. In addition, management can easily monitor process outcomes, asset performance and downtime, and equipment utilization against one or more KPIs such as Overall Equipment Effectiveness.
- **Low IT administration:** rapidHistorian's intuitive and robust data management interface ensures fast and open data integration and administrative control. Further data and system reliability can be achieved using rapidHistorian's optional components which include high availability, caching, redundancy and data replication features.
- **Secure data, user authentication & electronic signatures:** rapidHistorian enables comprehensive user authentication, audit trail management and electronic signature control ensuring data and system integrity and adherence with regulatory requirements.

## rapidHistorian Key Components

- **Data Capture:** rapidHistorian collects data from any control system or device. Supported data formats include time series, batch (ISA 88), Alarm & Event and binary.
- **Reporting Tool:** rapidHistorian's reporting capability collects and manages data retrieved from external control systems and batch execution systems. Users can explore time series, alarm & event and batch data, batch lists, select batch data sources, define report properties and run and save reports.
- **Audit Reporting Tool:** rapidHistorian provides a tamper-evident record of all interactions with a database. Using the audit server the audit database can track interactions with multiple local or remote rapidHistorian databases and generate comprehensive audit trail reports. Audit reports can include data on a range of audit queries including interactions by specific user, type of activity or within a specific time period.
- **rapid-XL Add-In:** rapidHistorian's XL Add-In transforms Microsoft Excel into a powerful rapidHistorian query and modeling tool.
- **Digital Signatures:** Reports generated with rapidHistorian's reporting tools can be digitally signed. Signed reports may be versioned and stored in the rapidHistorian database.

## System Availability Components

- **Server High Availability:** rapidHistorian's High Availability component allows manufacturers to bolster server uptime to 99.999% availability. This module pairs a primary server with multiple standby servers.
- **Database Replication:** rapidHistorian's Data Replication component provides database mirroring on one or more remote servers.
- **Caching & Redundancy:** The rapidHistorian Caching component ensures continuous data capture in the event of network failure.

## rapidHistorian Solutions Family



Automsoft are recognized leaders in the process life sciences sector. rapidPharma centralizes all plant data enabling advanced control and process optimization. In addition to rapidHistorian's key application features, rapidPharma also incorporates the following life sciences industry-specific features:

- **Batch management & optimization:** rapidPharma interfaces with external Batch Execution Systems enabling complete centralization of disparate batch data. rapidPharma simplifies data retrieval and storage of complex S88 batch data. Lab technicians and engineers can perform bespoke batch analysis reports, review variables, conduct batch comparisons and identify optimum recipes for future replication.
- **Alignment with FDA PAT guidance:** rapidPharma supports the FDA Process Analytic Technology framework by enabling multivariate data integration, data and process analytical chemistry tools, process and end-point monitoring and control, as well as an interface with continuous improvement and knowledge management tools.
- **FDA 21 CFR Part 11 Compliance:**
  - Security:** rapidPharma leverages operating system level security sub-systems to enable administrators to control and manage user authentication and authority checks.
  - Audit Trail:** rapidPharma records each human interaction with the rapidHistorian system in a discrete, tamper-proof, self-auditing Audit Database. Administrators can use rapidPharma's Audit Reporting Tool to generate completely traceable audit records of all interactions.
  - Electronic Signatures:** Using digital signature technology, rapidPharma enables the application of electronic signatures (comprising user name, time and purpose of signing) which can be applied to reports.



rapidPower from Automsoft is a robust and powerful distributed data historian capable of delivering power and utility companies with high-speed data capture, vast data storage and comprehensive reporting and analysis. Key rapidPower features include:

- **Centralized process data historian:** The rapidPower application is a robust and extensible data historian capable of open data interfacing, retrieving and archiving real-time data from dispersed plant control systems, grid asset databases and market data sources.
- **Energy scheduling & dispatch management:** rapidPower enables operators to implement economic dispatch plans by analyzing both real-time and archived process data to determine optimum generation among plant units that will meet expected demand at a low cost and in line with constraints.
- **Turbine generator & plant asset monitoring:** Users can monitor data retrieved by rapidPower from the control systems of critical plant assets. Users can monitor outputs, respond to adverse data fluctuations and alerts, in order to minimize equipment stress, eliminate inefficiencies and avoid costly downtime.
- **Market data aggregation:** rapidPower retrieves and stores data from market data clouds enabling power and utility companies to profitably bid for and schedule energy supply in line with capacity. Users can analyze archived data for deeper operational and competitive understanding.
- **Enterprise reporting dashboard:** Users can build, generate and share once-off or continuous analysis reports using data retrieved from one or more plant data sources. Reports can also be easily exported from rapidPower to other third party applications.
- **Alarm & event management:** rapidPower retrieves alarm and event data from individual control systems, alerting operators to run-time events and enabling fast fault prevention and resolution. Archived data may also be analyzed to determine optimum performance constraints that ensure asset integrity and plant safety.
- **Emissions monitoring & regulatory compliance:** rapidPower enables users to view, manage and report on emissions data. Power and utility plants can also achieve greater regulatory compliance by using rapidPower's audit reporting, electronic signatures and data traceability features in addition to its secure user authentication controls.

*Optional rapidPower functional add-ons include: Audit Reporting, Server High Availability, Network High Availability, Data Replication, OPC Caching and Redundancy.*



rapidEnergy, a high performance distributed database system that brings together rich business intelligence across the entire oilfield, refinery and distribution supply chain. rapidEnergy can be embedded throughout offshore platforms & wells, production vessels, refineries, distribution and transportation facilities capturing all process data from dispersed control systems. Features include:

- **Centralized data aggregation:** rapidEnergy's open, vendor-neutral data compatibility means it can interface with proprietary data stores across the oil and gas supply chain. rapidEnergy has the capacity to centralize vast volumes of input and output data, time series, alarm & event and binary data.
- **Enterprise process management dashboard:** Onshore and offshore operators can access a single, centralized dashboard of real-time production data aggregated from individual wells, plant-wide refineries or distribution stations. Using rapidEnergy's suite of analysis tools engineers can interrogate data and perform diagnostics and process modeling for swift process optimization and enhanced decision-making.
- **Dispersed asset fleet management:** Field operators must monitor both new and mature mission-critical process machinery 24/7. rapidPower's management dashboard enables onsite or head office users to quickly observe sensor outputs for all remote energy devices. Operators can react to unfavorable climactic or process conditions using rapidPower's event and alarm management tools, remotely schedule regular maintenance checks ensuring asset longevity and process safety.
- **Process visualization & centralized reporting:** rapidEnergy's powerful visualization tools allow engineers and analysts to build dynamic graphical and relational data reports on single or multiple processes. Reports and graphs can also be output to third party applications such as MS Excel or other business applications as required.



Industrial equipment and process control software manufacturers continue to seek new ways to extend product value and reduce time to market. Central to successful equipment and process design is an ability to capture and analyze process performance. However, developing robust and complex database applications can be a protracted and expensive process and often outside of domain expertise.

Automsoft's rapidOEM is a flexible and open data historian solution which can be embedded by process equipment and control system manufacturers, software houses (ISVs) and resellers (VARs) into applications to quickly achieve advanced process data aggregation, archiving and analysis capabilities.

A rapidOEM solution is comprised of a scalable and powerful embedded rapidHistorian object and optional rapid add-ons that seamlessly integrate alongside existing application components. Choosing rapidOEM helps equipment and software manufacturers to:

- Eliminate costly and time consuming software development.
- Safeguard competitiveness by increasing the rate of product development and achieve faster time to market.
- Provide product end-users with;
  - Powerful process data storage, analysis and predictive modeling.
  - Increased ROI and extended asset life span through improved monitoring, root cause analysis and asset optimization capabilities.
  - rapidOEM provides data historian and process optimization power to a wealth of manufacturing industry sectors such as energy, life sciences, oil and gas and food and beverage.
- rapidOEM integrates with:
  - Manufacturing and engineering process control software systems.
  - Industrial process equipment.

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