

# Power & Utilities

POWER GENERATION | SMART GRID | ENERGY MANAGEMENT | FRESH AND WASTE WATER

From plant floor to boardroom, power and utilities companies must tackle both internal and external challenges that can test their ability to achieve sustainable, profitable and reliable energy generation and service supply. Challenges include:

### Operational challenges:

- Ensuring stable and safe service supply
- Balancing capacity with demand
- Asset Management
- Maximizing profit while reducing capital costs
- Achieving Continuous Improvement & KPI goals
- Demand Response to Market Data

### Environmental challenges:

- Consumers demand consistency of supply
- Tighter competition is driving down margins
- Strict emissions control regulations
- Compliance with strict quality and safety standards

## Automsoft Solutions for Power & Utilities

Automsoft delivers a comprehensive response to the typical process, asset management, data and regulatory challenges faced by today's power and utility companies. Solutions for the power and utilities sector include:



### RAPID™

Automsoft's RAPID™ technology is capable of delivering power and utility companies with high-speed data capture, vast data storage and comprehensive reporting and analysis. Key RAPID™ features include:

• **Centralized process data historian:** RAPID™ has robust and extensible data historian functionality 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:** RAPID™ 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 RAPID™ 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:** RAPID™ 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 RAPID™ to other third party applications.

• **Alarm & event management:** RAPID™ 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:** RAPID™ enables users to view, manage and report on emissions data. Power and utility plants can also achieve greater regulatory compliance by using RAPID's audit reporting, electronic signatures and data traceability features in addition to its secure user authentication controls.

*Optional RAPID™ functional add-ons include:*

*Audit Reporting, Server High Availability, Network High Availability, Data Replication, OPC Caching and Redundancy.*

### Automsoft Technology Highlights

- > ASHRE, ANSI & ISO compliant
- > High-speed data compression & storage
- > Application & data independent
- > Web services/SOA
- > OPC Compliant (HDA, DA, UA, A&E)
- > Multiple data source compatibility (ODBC, OPC, OLE/DB, ADO.NET, SQLServer, Oracle and web services)
- > Centralized data management & visibility
- > Complex data interrogation – calculation Engine, Excel add-in
- > Extensible information model
- > Alarm & event management
- > Extensive visualization tools – graphics & animated instrumentation
- > Integrated security, user authentication & audit traceability
- > Server & network high availability
- > Comprehensive backup, caching & redundancy Intuitive user interface
- > Anytime, anywhere access
- > Open web services data distribution

### About Automsoft

Automsoft is a technology pioneer. In 2001, Automsoft launched the world's fastest and highest performing data historian, completely re-thinking conventions on technology and the management of process data. Today, Automsoft's RAPID™ database technology is at the forefront in complex asset management, and provides the data backbone for managing the massive volume of data generated by sensor networks, control systems and devices across industries from smart grid to medical sensing technology. Automsoft is headquartered in the Republic of Ireland.

For more information, please visit <http://www.automsoft.com>.



Automsoft's groundbreaking Rich Internet Application provides power and utility companies with advanced web-based process management and visualization capabilities. Key features include:

- **Web-enabled enterprise dashboard:** rapidVision's insightful process management dashboard is accessible from any web-enabled PC. Authorized users can quickly view, query and respond to the latest data updates, perform bespoke trending and analysis, generate report templates and collaborate on strategies that achieve more efficient and profitable process outcomes.
- **Advanced process & event visualization:** Powerful data visualization tools within rapidVision transform data points into process mimics, so enabling engineers to initiate a response regardless of their location within the plant network.
- **Integrate and view grid & market data updates:** rapidVision can present data retrieved from grid transmission websites enabling utilities to view real-time market demand data and embed the website link into a rapidVision template so that operators can view website updates and schedule operations in line with bids and capacity.
- **Calculation Engine & predictive modeling:** rapidVision's Calculation Engine enables plant analysts to perform powerful historic data analysis and predictive modeling to reveal optimum process and asset constraints that achieve profitable and efficient output and reliable service delivery.

## Automsoft

### Key Statistics

- > Volume range from minute (< 10 Megabytes) to massive (> 10 Petabytes)
- > Ingestion rate 3 million events per second
- > Read rate 4.4 million events per second

## Automsoft Benefits for Power & Utilities

- **Achieve cost effective & efficient power generation** by monitoring and controlling fuel consumption rates and optimizing turbine generators and plant processes.
- **Minimize fuel & operating costs** through leaner workflow practices that reduce waste, minimize labor and prevent service downtime.
- **Enhance business intelligence & collaborative decision-making** using enterprise report and analysis dashboards.
- **Increase service reliability & availability** by employing comprehensive alarm and event, asset monitoring and process optimization features.
- **Comply with regulatory and safety standards** by optimizing asset performance within safe constraints, managing plant emissions and enabling comprehensive audit reporting and traceability.
- **Improve plant asset and IT system ROI** through open vendor-independent data, application standards and comprehensive asset management capabilities
- **Bolster staff safety, security & data traceability** through comprehensive alert management, user authentication and audit traceability tools.

## CASE STUDY - AES Kilroot

### About AES Kilroot

AES Kilroot is part of the AES Corporation (NYSE:AES), a Fortune 500 global power company with generation and distribution businesses which provide thermal and renewable energy supply in 29 countries on five continents. AES Corporation runs 132 generation plants, including 15 facilities at integrated utilities and 14 utilities with total annual revenues of \$16 billion and a global workforce of 25,000. For more information, please visit <http://www.aes.com>.

AES Kilroot based in Carrickfergus, Northern Ireland, is a dual coal and oil fired facility comprised of two generators each capable of producing 300 Megawatts of power and is the leading supplier to the Northern Ireland grid.

### Automsoft Solution

In 1997 Automsoft was commissioned to provide its RAPID™ technology to collate every plant process data point into a multi terabyte centralized data archive. This process data, which is accessible over the network from any workstation, complies with external regulatory requirements that demand comprehensive logging, now over seventeen years archived data, with no loss or failure in data history. In 2006 the RAPID system was extended to collect and report on real time market data. This historical market data has enabled AES to gain a competitive edge over other player in the All Island Market. AES Kilroot also use Automsoft's RAPID technology as an extensive diagnostic tool enabling plant management to generate reports and highly visual graphs on the fly. Processes can be compared over time in order to define best practice plans that control emissions, maintain service levels and alert management to breaches in safety constraints.

*"We believe we derive significant value from Automsoft's RAPID™ system and would not be without it, not least because over the years many elements have been tailored to our specific needs...there is no doubt whatsoever that the cumulative effect is of significant cost saving through eliminating inefficiencies as far as possible and consistently optimizing performance from our production resources."*

Andrew O'Hare – Plant Manager, AES Kilroot.



AES Corporation Company



### EMEA

Dublin, Ireland  
Tel: + 353 1 449 1100  
Fax: + 353 1 449 1199

### North America

Princeton, NJ  
Tel: +1 650 585 4338

Email: [info@automsoft.com](mailto:info@automsoft.com)  
Support: [support@automsoft.com](mailto:support@automsoft.com)  
Web: [www.automsoft.com](http://www.automsoft.com)