



Maritime

MERCHANT VESSELS INCLUDING: DRY CARGO, TANKERS, LNG, PASSENGER,

The global maritime industry encompasses many forms of merchant shipping including cruise liners, cargo and passenger ships, oil and gas exploration, pipe and cable-laying vessels to icebreakers. The day to day running of commercial surface vessels involves the management of numerous individual ship systems, which produce large volumes of operational data. By exploiting this process intelligence merchant shipping companies can define strategies that achieve safe, profitable and on-time operating standards.

Typical onboard vessel systems include:

- Vessel propulsion
- HVAC
- Positioning
- Vessel motion stabilization
- Power & heat management
- Water (waste, fresh, desalination) management

Automsoft Solutions for the Maritime Sector

At Automsoft we understand merchant shipping and the multitude of onboard processes which must be managed during a typical voyage. Our RAPID™ technology is at the heart of many of the world's leading merchant shipping operations.



RAPID™

Automsoft's RAPID™ technology delivers global maritime companies with a robust integrated data management system that brings together vessel-wide process data into a centralized data store for both onboard and onshore process analysis. RAPID™ easily interfaces with control systems that manage a vessel's vital equipment such as generators, gas turbines, propulsion systems, thrusters, compressors and fans. RAPID™ features include:

- **Centralized data aggregation:** RAPID™ interfaces with a vessel's integrated control systems enabling fast data retrieval, storage and distribution of input and output data, time-series process data, and binary data (documents, spreadsheets).
- **Ship system & asset optimization:** RAPID™ provides vessel engineers with a comprehensive store of real-time and historic process data for extensive vessel-wide system monitoring and predictive modeling. Engineers can plan optimum workflow routines and maintenance schedules that retain asset longevity and system uptime.
- **Centralized reporting & analysis:** Vessel operators, engineers and onshore analysts can quickly access, build and share dynamic process reports from a single centralized dashboard. Users can quickly interrogate data and perform diagnostics both within RAPID™ or export to Microsoft Excel or other business application.
- **Alarm & Event management:** RAPID's alarm and event management feature enables engineers to receive real-time alerts to breaches of process constraints and so enabling them to quickly isolate issues and carry out maintenance so that vital vessel control systems are maintained to efficient and safe operating levels.
- **Secure user administration & audit traceability:** RAPID's user authentication, audit reporting and traceability features enable users to generate detailed audit trail reports that meet regulatory and safety compliance requirements.

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

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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 & 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, OPC caching & redundancy
- > 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>.



Given the diverse nature of vessel infrastructures, merchant shipping companies must overcome the data and process visualization challenges that this poses. rapidVision from Automsoft is a Rich Internet Application that provides advanced enterprise visualization and control. rapidVision' features include:

- **Ship-wide process visibility:** rapidVision provides a secure web-based dashboard of a vessel's entire process and control system infrastructure. Accessible from anywhere browser within the vessel infrastructure, authorized users can quickly log on and view real-time or archived reports and graphs of enterprise process and control system performance.
- **Process & event management dashboard:** Engineers and operators can view and manage controls and respond to alerts and events via a single web-based dashboard therefore minimizing requirements to leave centralized operations to attend to remote assets within restricted, difficult to reach or hazardous areas of the vessel.
- **Vessel control gauge animation:** rapidVision' online visualization tools transform numeric process data into colorful visual aids and mimics that dynamically update in run-time for advanced vessel control and asset monitoring.
- **Web-based data exchange:** rapidVision interfaces with a vessel's control systems using a web services interface, which remotely requests and retrieves data via HTTP securely retaining a ship's network integrity and achieving fast data exchange.

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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 the Maritime Sector

- **Reduce operating costs** by minimizing energy use and wastage, eliminating process inefficiencies, reducing labor costs and extending vital asset longevity.
- **Bolster workforce, passenger & environmental safety** using Automsoft's comprehensive alarm and event management to maintain processes within safe operating levels.
- **Boost fleet performance intelligence** using Automsoft's powerful data aggregation and archiving capacity for onboard or onshore analysis and comparisons of one or more vessels within a fleet.
- **Quickly achieve ship-wide process visualization** using Automsoft's centralized live data management, reporting and process visualization dashboards.
- **Extend onboard asset & IT system longevity** using Automsoft's open application and data interfacing, asset monitoring and maintenance.



CASE STUDY - Allseas

About Allseas

Swiss-based Allseas Group is one of the major offshore pipe-lay and subsea construction companies in the world, operating seven specialized pipe-laying vessels. Since 1986 Allseas has executed more than 200 offshore pipe-lay and trenching contracts for oil and gas companies.

Challenge:

Allseas required an operational data management solution that could integrate with control systems on each vessel within their fleet to enable advanced data aggregation and process optimization of the large volumes of positioning, stabilization and utility data produced by each of their vessels every day. This data needs to be provided on a day to day basis for onboard analysis and archived for longer term onshore analysis together with data from other vessels.

Solution:

Allseas chose Automsoft's RAPID™ technology to provide the comprehensive data collection, vast data storage and powerful data management capabilities they required. Today, RAPID™ is integrated within Allseas' fleet including the world's largest pipelay vessel 'Solitaire' where the technology is actively delivering process intelligence and control to the vessel's workforce. Data collected directly from the maritime automation system is stored locally on the vessel and can also be seamlessly transmitted to Allseas shore operations center using spare band width on their satellite link.



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
Support: support@automsoft.com
Web: www.automsoft.com