AVEVA

Unlocking digital transformation in ship production

Integrated enterprise resource management for the entire shipbuilding process

The complexity of modern vessels and the various business processes involved in their creation requires the control and use of vast amounts of resources and information.

While enterprise applications may be used to support individual processes such as managing time, expenditure and risk, the inability to share and reuse information between applications limits overall business efficiency, potentially leading to delays, penalties and risk.

The main challenges faced by a shipyard today are:

Lack of integration between departments
Having to re-enter data into more than one system compromises information reliability and quality, and significantly increases the total time spent by teams entering and searching for information.

1

Inefficient material management and control
In general, some 60–70% of the cost of a new-build relates to material costs. This means that any overspend in material acquisition significantly affects financial results.

2

Rework due to lack of control and visibility
Typically, 5% of the cost of a shipbuilding project is spent on engineering and 60–70% on materials. A shipyard has an average of 25–35% of the total costs of a project to control or save on direct and indirect labour. Any rework will affect the overall cost of the project.

3

Management KPI query repository
Shipyards often lack a single database with information from every phase of the project, from which it is possible to extract all the managerial KPIs for quick and effective decision making.

4

AVEVA™ Enterprise Resource Management

Made for shipbuilders by shipbuilders

AVEVA™ Enterprise Resource Management is a new generation of resource management applications that meet the specific needs of the shipbuilding industry.

This family of products not only improves productivity, minimizes material and production costs and increases project quality, but also supports business diversification into complex projects combining marine and plant engineering, such as FPSOs and offshore construction.

The integrated AVEVA Enterprise Resource Management suite of applications supports the entire ship design and production process, from initial project planning and material definition, through Bill of Materials (BoM) management, procurement and logistics, to project and production planning and control.

AVEVA Enterprise Resource Management provides unrivalled data integrity and its modular framework is flexible enough to meet the evolving requirements of any enterprise.

AVEVA Enterprise Resource Management ensures:

- The right materials are delivered to the right place at the right time

- Progress and costs are accurately monitored

- Management decisions are based on up-to-date, detailed and accurate information

- Historical data is readily usable when tendering for new projects

- Accurate and detailed information can be extracted for management reporting

Based on AVEVA's open technology, AVEVA Enterprise Resource Management integrates seamlessly with in-house or third-party systems, protecting your investment in technology and information.

Embodying proven shipbuilding best practices and extensive industry experience, AVEVA Enterprise Resource Management enables the streamlining of all shipyard work processes.

Uniquely, AVEVA Enterprise Resource Management offers configurable, secure third-party access to its information, enabling seamless and effective collaboration on joint projects with other shipyards.

Shortened timescales

- Predict and prevent problems and bottlenecks
- Plan more efficient work schedules
- Avoid delays through materials shortages

Improved project quality

- Improves your project monitoring and control
- Improves your data quality, availability and visibility
- Minimizes errors and rework

04 **01**

Benefits of ERM

03 **02**

Decrease production costs

- Increase efficiency and coordination of working processes
- Optimize resource use and materials availability

Lower materials costs

- Buy the right materials at the best price
- Minimize waste and surpluses

"AVEVA Enterprise Resource Management has changed the concept of production planning and control for Oceana. It has enabled our various departments to work together with great efficiency such that we delivered our first vessel – a PX105 design platform supply vessel (PSV) – on time, and our second vessel two months ahead of schedule."

-Juliano Pamplona, Head of Planning, Oceana

AVEVA Enterprise Resource Management consists of:

Planning

A project planning and control tool, enabling the management and control of work breakdown structures and tasks.

Material

A materials management tool which supports the entire materials flow, from budgeting through requirements, procurement, receipt, warehousing, and issue.

Construction (Production)

A construction planning and control tool, enabling the detailed management, scheduling and control of work orders and jobs in detail by using information provided by Planning and Material.
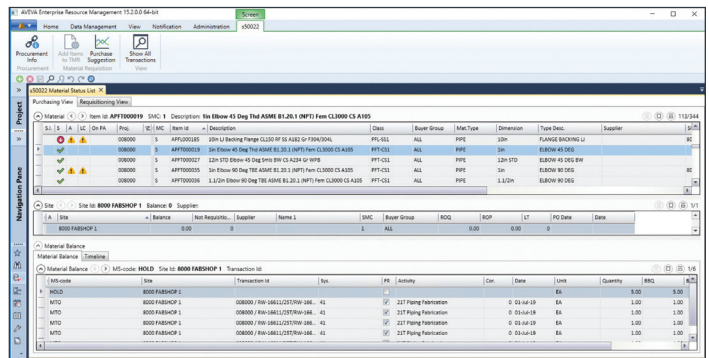
Catalog Manager

A tool for creating and managing bulk material catalogues, supporting the materials management lifecycle. Configurable to manage multiple engineering disciplines and meet corporate and client standards, it includes a tool to create and manage piping specifications to fully align 3D design with materials management.

Each module can be used independently, but the full value of AVEVA Enterprise Resource Management is achieved through seamless integration on a single database shared by all its applications. This unique feature ensures the best possible coordination between planning, material management and all other shipbuilding processes, and enables a progressive deployment to suit business needs and opportunities, with measurable benefits achievable at every stage.
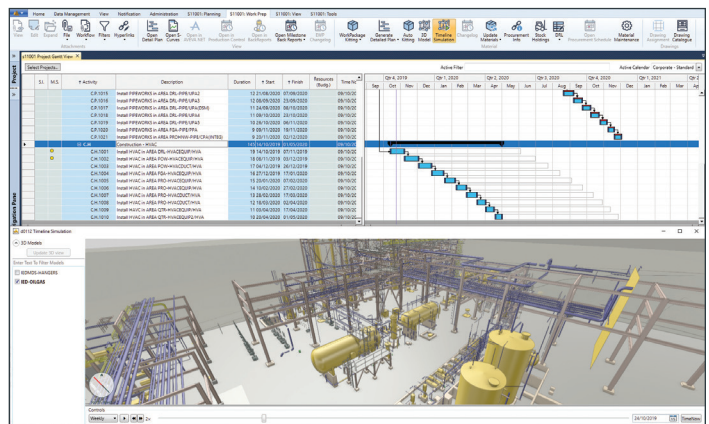
Unique in the market, AVEVA Enterprise Resource Management combines material management, project planning and production control with engineering data and design models. This integration has created a new family of powerful, easy-to-use products.

- Easy-to-use user interface means business adoption is simple

- Out-of-the-box seamless integration with many other AVEVA products makes interoperability effortless

- Built-in, best-of-class features support engineering, multi-discipline bulk materials including steel

- Simple integration with other Enterprise Resource Planning (ERP) systems and configurable to suit your needs

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Material status provides both the overall status of any project item, as well as details quantities at various stages

Material linked to activities allows 4D visualization and timeline simulation

AVEVA Enterprise Resource Management in the cloud

AVEVA Enterprise Resource Management can be deployed on-premises, or as a private cloud service provisioned by AVEVA through our AVEVA™ Connect cloud platform, making it accessible wherever there is an internet connection.

Provide your global teams with a scalable, robust and reliable corporate enterprise resource management solution so they can deliver unified and integrated business processes, local and global projects in a globally shared environment.

Why cloud, why now?

Increase collaboration

The cloud allows you to consolidate data from multiple sources into a central location for improved transparency, accessibility and visibility across your value chain. Easily and securely share engineering models and critical operational information with employees, trusted partners and suppliers. Everyone sees the same data in context so smart collaboration is made possible. Data is unlocked and made available anywhere, anytime and any device.

Futureproof investments

Augment existing systems with digital services. Take advantage of new capabilities such as machine learning, artificial intelligence, advanced analytics, and more, all as a natural extension to existing systems. The cloud forms the backbone to the advanced digital twin so that you have a "living" representation of all elements of your engineering and operational activities.

Reduce costs

All the benefits of industrial software without the overhead of installation, deployment, version control and hardware maintenance. And because it's the same easy to use software now accessed over the internet, training costs are minimized. The cloud offers commercial flexibility too with various subscription approaches available. Pay for what you use, and quickly scale as required. Plus, your IT burden is reduced since AVEVA provides the necessary computing Infrastructure, backup, updates, security, and performance.

AVEVA Enterprise Resource Management Mobile App

AVEVA™ ERM Construction Onsite

Access AVEVA Enterprise Resource Management remotely, from any global location with a tablet or mobile device. View job cards and work packages, record progress, and report back to construction control, all from a mobile device. Allowing for real-time responses to monitor and accelerate project delivery anywhere in the world.

Unified systems for maximum value

AVEVA Enterprise Resource Management can be deployed as part of an AVEVA™ Unified Engineering or project execution solution, where additional AVEVA solution components can be combined to derive the maximum return on your technology investment.

Unified Engineering

For example, the combination of AVEVA Enterprise Resource Management with AVEVA™ Asset Information Management and AVEVA Marine allows customers to uniquely benefit from a completely integrated production management and control solution.

Using this combination, production workers can access not only their list of jobs from Planning, but also 3D models from AVEVA Marine, and all the project documentation – such as drawings, photos, and datasheets – from the integrated information environment of AVEVA Asset Information Management.

Additionally, workers can provide feedback via their production control interface that will actively set access control to the 3D design model in AVEVA Marine or to documents in a third-party document management system.

Unified Project Execution

AVEVA Enterprise Resource Management combines with AVEVA™ Contract Risk Management to streamline CAPEX delivery systems and align planning, contract management, and resource allocation for minimized risk of project overages. Seamless, single-platform alignment improves forecast reliability through automated insights and timely alerts when key project success measures are trending to miss the target.

Scope change in vessel new-build and retrofit projects is vast and inevitable, requiring constant updates to contract and resource allocations each time there is an update to the plan. Commonly tracked manually, or with disconnected systems, each change increases the risk of human error and data loss which can ultimately drive up costs and push back the schedule.

AVEVA's integrated solutions deliver measurable benefits for executive, project, information, production and materials management.

> With the most integrated systems available on the market, teams can improve transparency, collaboration, and decrease total project costs for better overall performance.

For more information on AVEVA Enterprise Resource Management, visit: https://www.aveva.com/en/products/enterprise-resource-management/ or contact us today.

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