



CUSTOMER CASE STUDY

AVIC International improved efficiency, collaboration, and productivity by switching from local software options to AVEVA's 3D modeling and parametric design, marine-specific design and planning software

AVIC International Ship Development Company
Industry - Shipbuilding

Goals

- Become a market leader with innovative, scalable technology that was not possible with their locally-sourced software
- Facilitate easier collaboration with other corporations by creating a common data depository
- Accurately design systems with detailed 3D modeling and parametric modeling

Challenges

- Move beyond restrictive software that lacked innovations and 3D design tools
- Become a specialist in high-value vessel construction
- Boost collaboration across global team

AVEVA Solution

- Initial Geometry™
- Hull Detail Design™
- Hull Structural Design™
- Assembly Planning™
- Outfitting™
- Marine Drafting™
- Cable Design™
- Outfitting Support™

Results

- AVIC achieved their ambition to become a specialist in high value vessel construction
- Integrated tools were vital to the success of their collaboration with their Finnish partners, Deltamarin
- Synchronized design data allowed for quicker communication
- Team was trained on AVEVA systems within just six weeks

Shanghai, China – AVIC International Ship Development (China) Company Ltd, headquartered in Shanghai, is part of AVIC International Holding Company, which operates two shipbuilding bases in China AVIC Weihai Shipyard and AVIC Dingheng Shipyard. In 2012, AVIC acquired the Deltamarin Group of Finland, which has over 25 years' experience in providing ship design, offshore engineering and construction support for marine and offshore industries worldwide.

AVIC Ship was established in 2013 to integrate and combine the shipping business and interests of AVIC International. The team brings over 20 years' experience in the design and build of bulk cargo ships, container vessels, multi-purpose vessels, oil tankers, liquefied gas carriers and chemicals vessels. The company offers a comprehensive vessel management service to domestic and international customers, including trading agency services, supply chain management, funding, joint investment project supervision ship leasing and engineering, procurement and construction (EPC) for ports and repair yards as well as shipbuilding.

Integrated digital design supports efficient collaboration and world-class delivery

When AVIC management took on a new strategic direction in 2016, to become a market-leader in innovative ship construction, they adopted AVEVA's integrated design and engineering tools, tailored to the marine industry. With AVEVA's help, AVIC has boosted collaboration across their global team and improved operational efficiency, achieving their ambition to become a specialist in high-value vessel construction.

Building competitive edge in global shipbuilding

“We concluded that AVEVA's integrated design solution, based on collaboration between different areas offered us the most feasible answer.”

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Chen Li,
Technology Manager, AVIC International

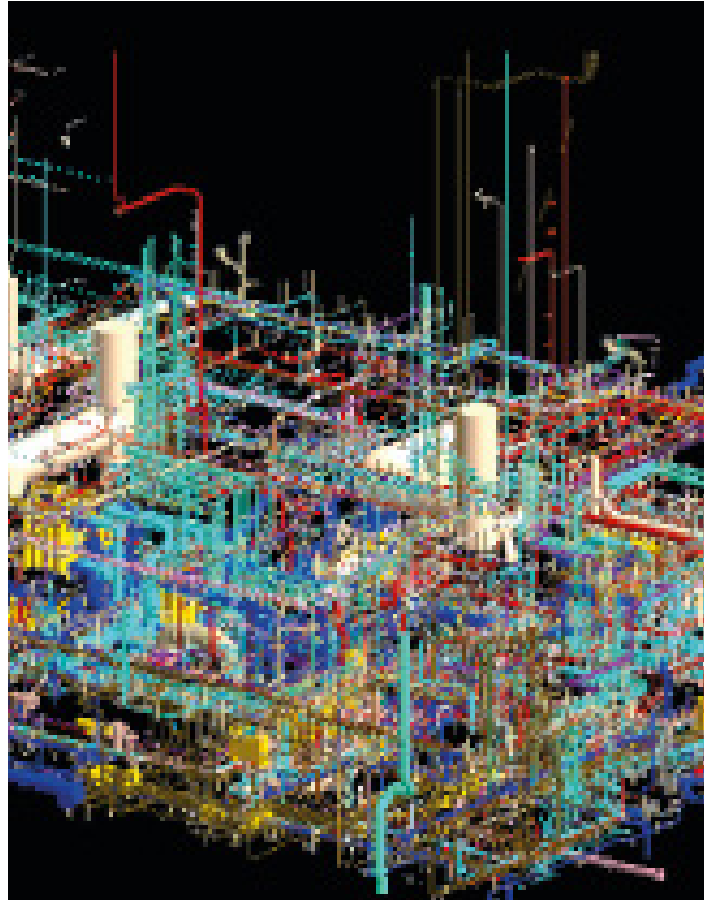


The AVIC Weihai Shipyard. Image courtesy of AVIC.

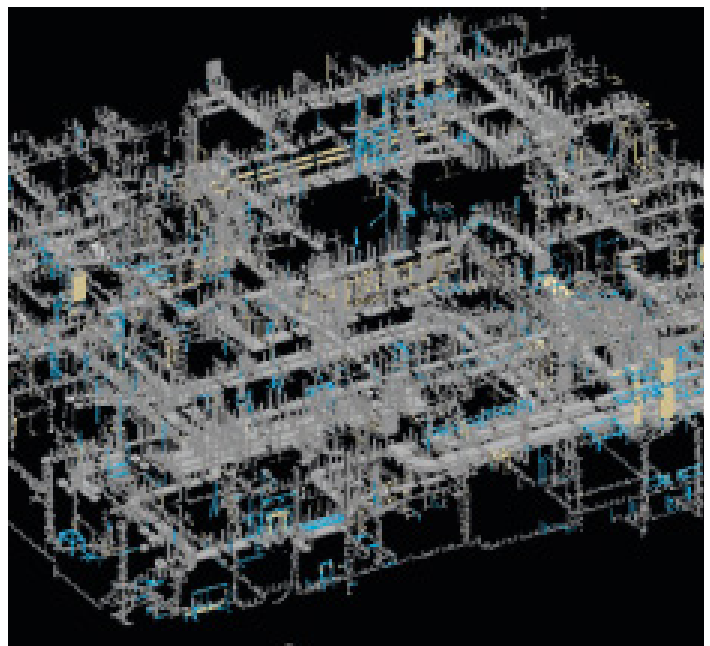
For many years, AVIC International relied upon local design software, developed in China but although these proved adequate, they lacked the sophistication of design tools offered by competitors in the shipbuilding sector. This approach was restricting the company's growth in the cost-constrained market. In response, in 2016 the company began an innovative strategic transformation to evolve from traditional commercial ship design to focus on higher-value vessels to build competitive advantage.

AVIC won a construction contract for a new Stena RO-RO, 3100m long vessel, with a passenger capacity of 930. This huge project was a milestone for the Weihai Shipyard and the team came to understand that using their established locally-sourced design technology did not provide the integration, scalability and innovative tools they needed to deliver efficient design and to enable productive collaboration with their Finnish partners, Deltamarin, who were carrying out the detailed vessel design.

Collaboration and integrated tools were vital to the success of the new design program, as AVIC needed to exploit the experience and skill of Deltamarin. The team also realised that the project would generate large amounts of data, and it would require 3-D visualization. AVIC's existing locally-sourced design systems were unable to handle the frequent design modifications expected with such a complex project. In addition, the project team was working to very tight timescales, and there was a laser focus on both costs and quality, within an extensive, global supply chain.



3D model of complex piping system. Image courtesy of AVIC.



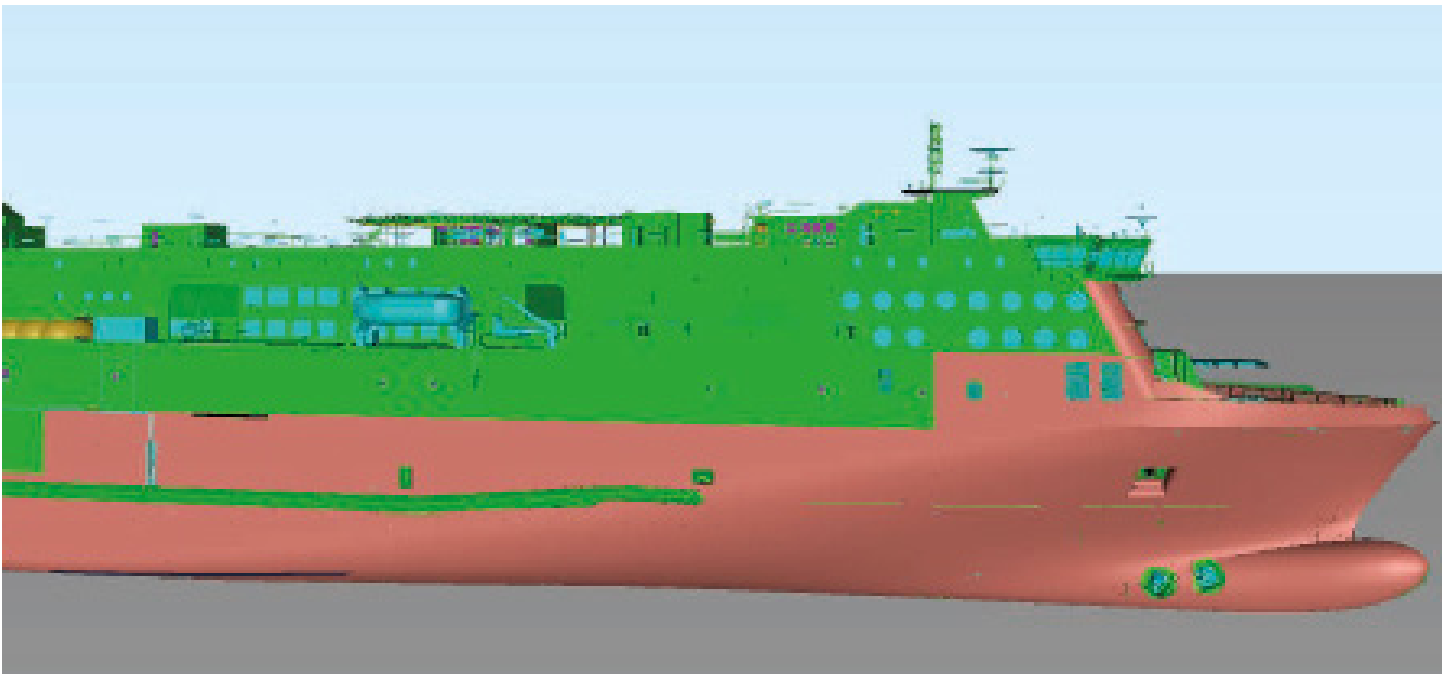
3D model of electrical system. Image courtesy of AVIC.

An integrated, collaborative shipbuilding software platform

Deltamarin designers were already using AVEVA Marine technology to create their design and engineering drawings. The AVIC team adopted AVEVA Global technology which allowed them to synchronise the design data from Delatmarin with their own systems at an early stage. The teams were trained in the new systems and were operational within just six weeks. AVIC International then validated the software by test and demonstration in just three months.

As a result, all the teams working on the Ropax project could contribute information to a common data repository, which was shared throughout the design and operational group, no matter where they were located in the world.

Other AVEVA Marine products were then introduced as required, to support detailed design and marine engineering functions. By using the AVEVA Marine suite, AVIC efficiently carried out the detailed structural design of the hull and produced 3D layout and detail drawings of all outfitting, eliminating clashes by using an integrated data repository that they shared with Deltamarin. Extensive use of parametric design further improved efficiency and saved design time, enabling the team to deliver the project swiftly and efficiently.



The complete model. Image courtesy of AVIC.