



## FACTS AT A GLANCE

**Company:** Shin Kurushima Dockyard Group

**Website:** [www.skdy.co.jp](http://www.skdy.co.jp)

**Description:** Shin Kurushima Dockyard Group is a group of companies specializing in shipbuilding. The group comprises Shin Kurushima Dockyard, Toyohashi Shipbuilding Company Limited, Shin Kochi Juko Company Limited, and Kanax Corporation. Since each of these companies specializes in building its own specific types of ships, the group emphasizes its ability to meet the diversified needs of its customers. Shin Kurushima Dockyard's main products are value-added vessels, such as car carriers, chemical tankers, and product tankers, with the company accomplishing 50 shipbuilding projects each year.

**Industry:** Shipbuilding

**Country:** Japan

## PRODUCTS USED

- SmartMarine® 3D

## KEY BENEFITS

- Reduced time for ship design with increased quality
- Enhanced ship design automation for increased reliability and efficiency
- Improved productivity with high-quality engineering data deliverables

## SMARTMARINE® 3D ENABLES SHIP DESIGN AUTOMATION FOR SKDY

Next-generation Intergraph® technology delivers significant time savings via rule-based design automation and optimization

## IDENTIFYING GOALS

Established in 1987, Shin Kurushima Dockyard Company Limited (SKDY) is one of the world's most productive shipyards today. Japan-based SKDY is recognized as a world-class brand, and the company prides itself in being among the top car carrier and chemical tanker producers in the world. SKDY also designs and constructs other types of vessels, including tankers, roll-on/roll-off ships, liquefied petroleum gas carriers, and many more.

SKDY is facing the challenges of an ageing work force with a decrease in the number of professional engineers in the shipbuilding industry, as well as those in the design and manufacturing divisions. However, to remain competitive in the global marketplace, the Japanese shipyard needs to continue executing its design processes effectively, while still maintaining high quality for its engineering projects. SKDY decided it needed to leverage leading-edge technology to increase its leading productivity numbers, as well as to drive improved quality and performance.

## OVERCOMING CHALLENGES

- Establish automation rules and object relationships to accommodate all ship models, including non-standard designs
- Eliminate time-consuming and inefficient process of verifying design
- Improve quality of production and overall productivity

## REALIZING RESULTS

SKDY found Intergraph® SmartMarine® 3D to be the perfect match for its requirements, being truly a next-generation solution with rule-based technology for ship design automation.

"To achieve our goals, we decided to introduce SmartMarine 3D as our 3D CAD system," said Isshin Fuji, general manager of the ship design department at SKDY. "This ensures that even engineers who are new to the industry and not as experienced can maintain quality, and utilize SmartMarine 3D's automated technology for a more efficient operation."

SmartMarine 3D is the world's most advanced offshore and shipbuilding design solution, providing SKDY with the capabilities it needs to gain and maintain an edge

in a highly competitive industry. SmartMarine 3D is breakthrough engineering technology that is automated, knowledge- and rule-driven, streamlining marine asset design processes and improving delivery schedules, with increased detail and manufacturing design productivity of up to 30 percent. SmartMarine 3D is endorsed and used by leading offshore and marine companies globally, including the most productive shipyard, the top offshore owner operator, the top fabrication yard, and the top classification society in the world.

Leveraging SmartMarine 3D's unique rule-based architecture, SKDY can include and enhance its own sophisticated automation rules to continuously drive productivity numbers. These custom rules allow the automated creation of parametric structure detail, as well as manufacturing parts through either manual or automatic selection. SKDY has succeeded in changing part selection rules from manual to automatic through the integration of its unique shipbuilding know-how and expertise into SmartMarine 3D.

SKDY has also established object relationships in SmartMarine 3D to help automate modification of ship design. Any required corrections can be identified quickly and easily, minimizing the impact on production. With the established automation rules, design time is now significantly reduced, and manual verification is also no longer needed.

SmartMarine 3D's proven efficiency and ability to include further design automation has enabled SKDY to reduce labor costs without sacrificing quality. With SmartMarine 3D, SKDY continues to enhance its competitiveness in the global shipbuilding industry.

"With its rule-based capabilities, SmartMarine 3D is the best solution for SKDY," said Fuji. "The innovative Intergraph solution with proven design automation will enable us to reduce the costs and time of building ships, while enhancing safety, quality, and productivity."

## MOVING FORWARD

SKDY has now standardized on Intergraph SmartMarine 3D for its ship design department, using it as the shipyard's enterprise solution of choice for all of its projects. The Japanese company will use SmartMarine 3D for full production, including early, detail, and manufacturing design, as well as fabrication planning. SKDY also plans to expand the use of SmartMarine 3D for all new ship design and production across all of its shipyards.



## ABOUT INTERGRAPH

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Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and

offshore facilities. Intergraph SG&I provides geospatially powered solutions, including ERDAS technologies, to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is a wholly owned subsidiary of Intergraph Corporation for the SG&I U.S. federal business.

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