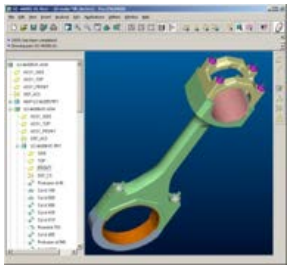
CASE STUDY: Wärtsilä Chooses Proficiency to Move Feature-Based Models Between CAD Systems

"In our opinion, today there is no more efficient way to convert intelligent 3D models from one design system into the other."

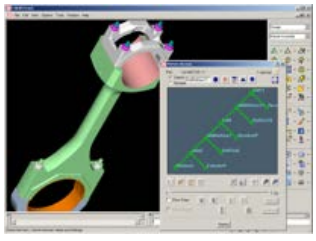
- Rudolf Holtbecker,
Wartsila Project Manager,
Engine Development

WÄRTSILÄ

Wärtsilä Corporation is a leading global ship power supplier, and a major provider of solutions for decentralized power generation. Headquartered in Finland, with offices in 60 countries, and with revenues in excess of EUR 2.4 billion per year, Wärtsilä is a leader in the application of technology to marine engine design.



A connecting rod, as delivered in Pro/ENGINEER



As converted to I-DEAS

Overview

When Wärtsilä Switzerland entered into a collaborative design initiative with a Japanese partner to develop a new ship engine, the need for data exchange became immediately apparent: the partner uses PTC's Pro/ENGINEER® for design work and Wärtsilä uses I-DEAS®, from EDS PLM Solutions.

Wärtsilä chose Proficiency to move feature-based models between the two CAD systems. As a result, the company expects to save more than 20,000 hours of manual labor by eliminating the need to create master drawings from 3D I-DEAS models. Additionally, Wärtsilä recognizes many strategic benefits to having a usable, parametric engine model.

Toward the end of 2002, Wärtsilä decided to build a new engine in the 500-600 mm cylinder bore range. The engine will be suitable for a variety of ship types, including bulk carriers and large product tankers. When complete, the engine will be built by Wärtsilä's ship building licensees.

The collaborative effort with the Japanese partner allows Wärtsilä to pool resources and experience to deliver a superior engine, leveraging the best practices and competencies of each company.

Challenges

Wärtsilä has two main goals for the project: to deliver accurate 2D drawings to its suppliers as quickly and economically as possible, and to produce an accurate 3D feature-based representation of the entire engine. In order to accomplish this, the Pro/ENGINEER models must be converted to feature-based I-DEAS models after the partner has delivered them to Wärtsilä.

Wärtsilä evaluated a number of 'traditional' approaches to move 3D data between systems, however none met the company's needs. STEP only delivered "dumb" solids that could not be parametrically modified. Manually re-creating the feature data was too time-intensive and costly. For some engine components, suppliers need lead times in excess of a year. When the final model for one of these 'critical path' parts is received from the partner, it needs to be delivered to a supplier immediately. Any delay for translation could jeopardize the overall project.

Solution

Wärtsilä selected Proficiency to deliver the model data into I-DEAS. With Proficiency, Pro/ENGINEER models are automatically converted to I-DEAS, maintaining their design intelligence. Drawing creation time is far less than if created from 'dumb geometry.' Throughout the 18-month project, Wärtsilä will move thousands of models from Pro/ENGINEER to I-DEAS, and calculates the time saving to be approximately 20,000 hours, with risk of project delay substantially reduced.

Result

Beyond saving time for drawing creation, it is Wärtsilä's vision that having parametric 3D models of the final engine will make the company more competitive. Changes to the engine in order to accommodate specific needs of licensees will be far more efficient using the 3D feature-based models. Additionally, Wärtsilä can now deliver 3D models to its shipbuilding licensees for their use.

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