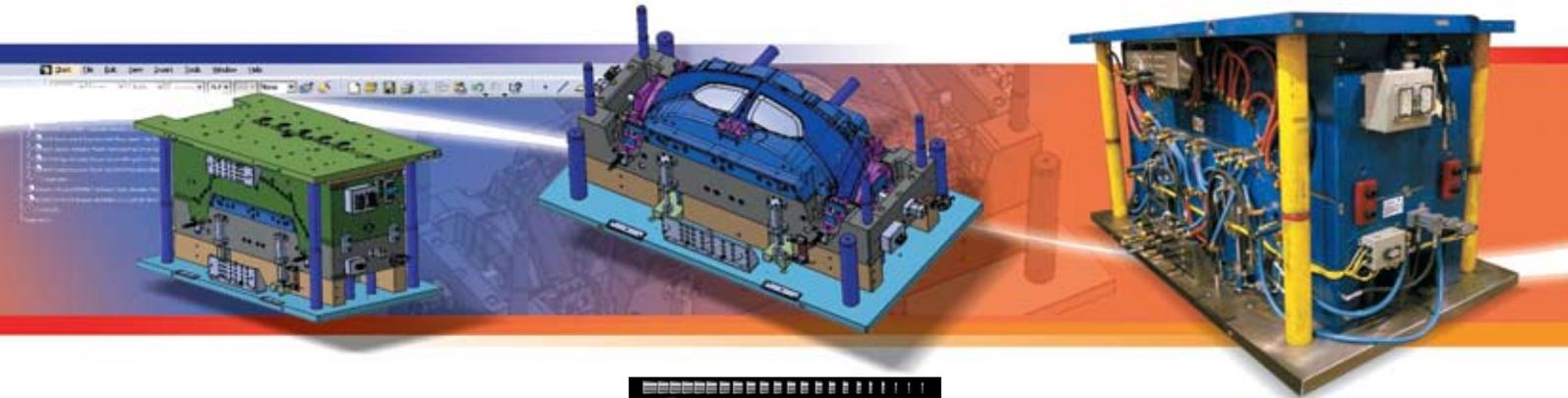# Concours Mold

Slices cycle times 30% with CATIA for Mold solution

Overview

■ Challenge

To make complex molds more quickly and accurately by eliminating repetitive, sequential processes and validating design functionality in the virtual stage.

■ Solution

Concours Mold adopted the CATIA for Mold solution, combining sophisticated mold surfacing and mold design in a single environment, plus template-based design for improved accuracy and efficiency in delivering against individual customer standards.

■ Benefits

On its very first attempt, Concours Mold reduced the overall time required to generate molds by 30%. It also validates designs virtually before production, facilitating more complex projects.

"CATIA enables our engineers and our customers to visualize the proposed mold design in 3D and present validation or concerns long before we start building the mold."

Luigi Nicoletti, Engineering Manager, Concours Mold

Blazing new mold-making trail with CATIA

With sales of about US $50 million, Concours Mold of Windsor, Canada, is the fourth-largest moldmaker in North America and moving up fast. Concours Mold produces large, complex injection molds used in the production of automotive components such as fascias, the body-skin panels at the front of a car. Such molds can feature thousands of parts, so seeing how the components operate together is critical to detecting interferences early.

Traditionally, however, mold makers have used CAD software to read customer design files and generate mold surface geometry, then translated the data into specialized niche software packages to create the mold design. This required data translation and data checking, adding delays, increasing the potential for errors, and requiring new translations with each new design change from the customer.

Niche tools also made it difficult to visualize an up-to-date design. "We couldn't see how all the parts fit together so we could validate the design, because we were doing part of the design in one software and part in another," remembers Luigi Nicoletti, engineering manager for Concours Mold.

Concours Mold found a better way when it switched to the CATIA for Mold solution, which performs both major design functions in the same package, saving time and eliminating the challenges created by non-concurrent engineering. As part of CATIA PLM Express, CATIA for Mold also features ENOVIA SmarTeam data management capabilities built into every seat.

"Using CATIA allowed us in our very first attempt to reduce the number of hours required to design a mold by 30%, and it costs about the same as far less powerful tools," Nicoletti said. "Plus, we knew the design would work because we had validated it virtually."

Templates ensure consistency, quality

"With CATIA Knowledgeware templates that are fully and easily configured, we now have more powerful capabilities

and embedded design standards we just didn't get with the previous application," Nicoletti said. "CATIA also offers other advantages over special-purpose tools, such as its ability to visualize the design as a rendered solid model."

Today, Concours Mold designers read the customer geometry, design the mold surfaces and produce the mold design as solid models within the CATIA PLM Express environment. The product design is associated to the mold surfaces, which in turn are associated to the mold design. As design changes arrive from the customer, both mold surfaces and product designs update in parallel, allowing mold design, manufacturing and assembly to proceed simultaneously for fast design-to-prototype production.

Concours Mold designers have leveraged CATIA's template-based design approach to capture and apply consistent, verified company standards to every design. Concours Mold then customizes these templates to create variations that reflect the unique requirements of specific customers. Typical customer standards might dictate variables such as screw and drill hole sizes and clearances. By using the customer-specific templates, Concours Mold quickly and easily ensures that every project conforms to both its own best practices and that customer's unique standards.

Working with 3D solid models also makes it easy to share designs with customers at any stage in the process.

This helps to identify and correct errors that otherwise might go unnoticed until manufacturing.

Faster responses win more business

By capturing and leveraging its knowledge in reusable templates, Concours Mold responds to customer orders more quickly. When it wins a bid, designers only need to enter a few refinements to that customer's intelligent templates to update the bid design to the final specification. This reduces delivery times, helps the company win short-cycle projects, and ensures high levels of customer satisfaction.
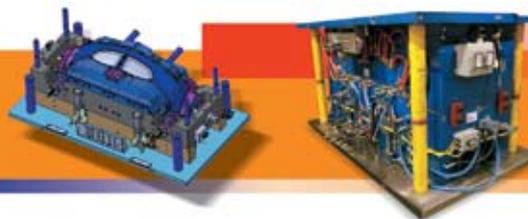
"As we gain more experience and continue to develop the templates, we expect to keep reducing our time to market," Nicoletti said. For example, the company plans to integrate its design and manufacturing operations by producing CNC programs directly from intelligent CATIA templates. "This should automate our process and reduce manufacturing costs, which account for 55% of the total cost of a mold," Nicoletti said. "And when we implement the ENOVIA SmarTeam functionality built into CATIA PLM Express, we will be able to reuse intellectual property from previous projects to save even more time and deliver more accurate quotes."

"The CATIA for Mold solution costs just about the same per seat as the far less capable mold design packages we used in the past, and it includes the added benefit of built-in ENOVIA SmarTeam product data management capabilities."

Luigi Nicoletti, Engineering Manager, Concours Mold

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