



EHPOC
High Performance Environment
for Optimization and Design

ESI solves Renault simulation-CAD coordination challenges during EHPOC evaluation project

THE CHALLENGE

Renault presented two related challenges to the EHPOC team:

- First, to better manage when part design changes required new simulation models.
- Second, when new models were needed, to better coordinate creating the new models with distributed teams.

THE SOLUTION

- ESI's Simulation Systems Integration modules Vdot™ and VisualDSS, demonstrated the ability to manage concurrent engineering in the multi-domain environment by defining the relationships between changing part designs and their simulation models.
- The software helped the teams follow their best practices with a consistent thread of related data items and complete visibility for management. Team process visibility was especially important in dynamically managing questions that arise coordinating the efforts of remote partners.

"VisualDSS and Vdot allowed us to promote an easier way to manage modeling projects in Renault. It has provided a tool for seamless updates of a master assembly, driven by an automated process with progress indicators."

Lucas Moulin,
Renault

ESI successfully demonstrated a solution to meet the industrial challenges posed by Renault for the recently concluded EHPOC project (High Performance Environment for Optimization and Design). The main goal of EHPOC, a 16M€ project funded by the French government and industrial partners, was to deliver "industrial platforms, multi-scale and multi-physics software dedicated to global design in order to produce best in class numerical design tools...", to be a "corner stone for industrial innovation and competitiveness, design and development cycles reductions, productivity improvement."

Renault had a two part challenge: 1) better manage existing and new simulation models as the related CAD data changes, and 2) better manage producing new models by distributed teams. The challenge had five specific concerns:

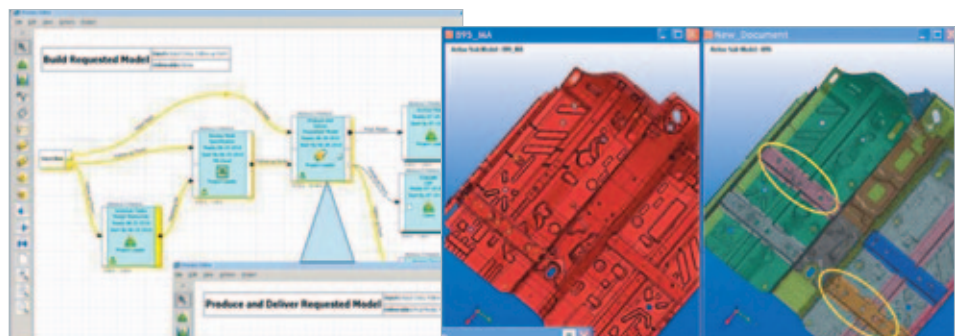
1. Maintain the link between simulation content (models and results) and changing CAD data.
2. Only create new simulation models when necessary.
3. Follow a well designed best practice when doing 1 and 2.
4. Ensure remote meshing teams have consistent data.
5. Ensure remote teams have the information needed to perform their tasks.

Both parts of the Renault challenge were characterized by ad-hoc activity. Part design changes happen for a variety of reasons and were not predictable by the meshing coordinator. A particular challenge was the dynamic nature of the remote team efforts. These were often characterized by unplanned questions between the CAD/CAE teams and the distributed meshing teams.

The evaluation found that ESI's Simulation Systems Integration modules completely addressed all five concerns. The powerful version comparison features matched the current cycle's CAD bill of materials with available simulation models and determined which of those had adequate meshes.

Once the list of needed new and modified meshes was produced, a process used the list to automatically activate sub-processes for each affected remote team to supply the needed new or updated meshes. The team executed each sub-process in a controlled workflow with management and team visibility.

In addition to assigning the right work to the right partner, ESI's process management solution gave Renault and the mesh suppliers complete visibility as the work progressed. In this regard, its unique flexibility allowed the process to dynamically handle questions that typically arise between customer and supplier in this kind of work.



Transparent execution with the right data - Vdot™

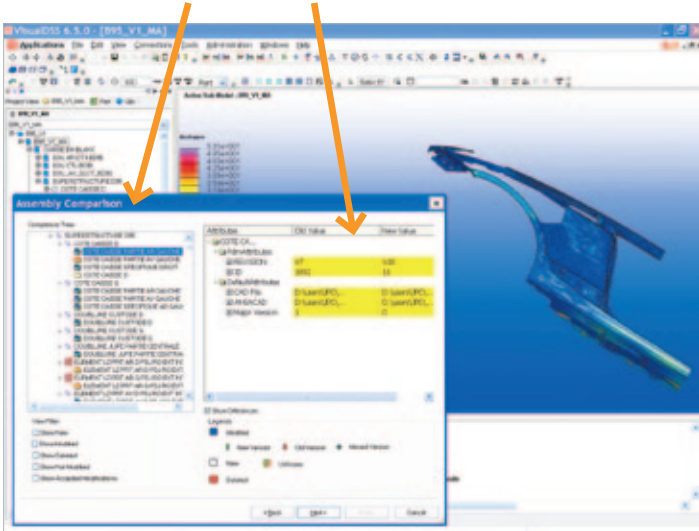
CAD - mesh comparison in VisualDSS

Manage CAD-CAE data consistency

ESI's Simulation Systems Integration software helps engineers manage their simulation data and keep them updated with the latest design changes coming from the CAD world.

It helps teams of engineers perform their tasks with the right data, at the right time, according to the enterprise best practices and with real-time visibility for management and the teams themselves.

Manage assembly and part changes



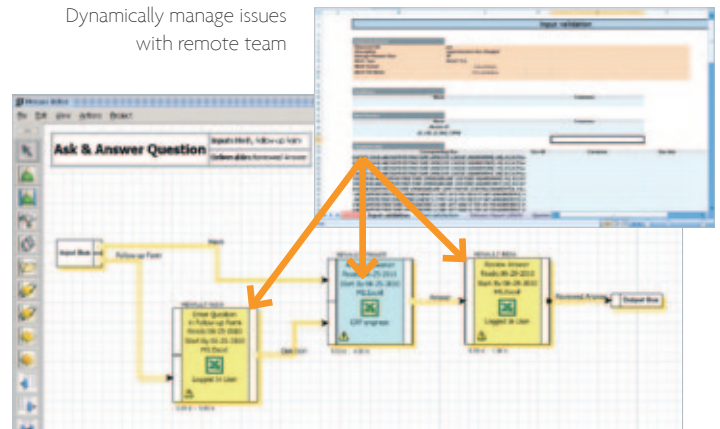
Manage distributed processes

The Renault evaluation team found that this solution gave the meshing coordinator three important benefits:

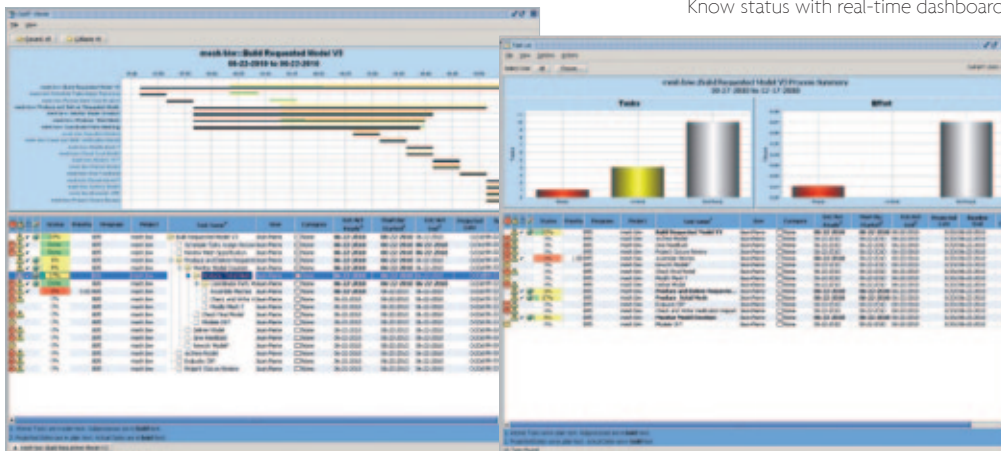
1. Easily compare existing simulation models to new CAD
2. Decide which models can be reused thus minimizing the number of meshes to be rebuilt
3. Keep track of the changes throughout the design process.

This software solution then sent the required work to the correct remote teams with automatic visibility for the meshing coordinator and the remote teams as they follow the best practice processes. Of particular value was its ability to dynamically start and track processes to resolve questions between the remote teams and the meshing coordinator.

Dynamically manage issues with remote team



Know status with real-time dashboards



To find out more about ESI's Simulation Systems Integration solutions, please visit: www.esi-group.com/ssi

ABOUT RENAULT

Renault was founded in France more than 110 years ago and has since developed internationally. Today it has over 30 production sites and 18,000 business sites (subsidiaries, dealerships and agents) in 118 countries. Renault designs, produces and sells a broad range of vehicles, including from 2011 a range of electric vehicles accessible to all that embodies the company's commitment to the environment.

ABOUT ESI GROUP

ESI is a pioneer and world-leading provider in virtual prototyping for manufacturing industries that takes into account the physics of materials. ESI has developed an extensive suite of coherent, industry-oriented applications to realistically simulate a product's behavior during testing, to fine-tune manufacturing processes in accordance with desired product performance, and to evaluate the environment's impact on performance. ESI's solutions fit into a single collaborative and open environment for End-to-End Virtual Prototyping, thus eliminating the need for physical prototypes during product development. The company employs about 850 high-level specialists worldwide covering more than 30 countries. ESI Group is listed in compartment C of NYSE Euronext Paris. For further information, visit www.esi-group.com.



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