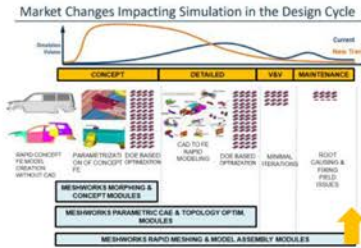


- MeshWorks tools can accelerate the concept phase of body development with its Morphing and ConceptWorks tool sets. Together with parameterization, the trio form comprehensive set for upfront body structure optimization.
- Parametric CAE, Design Enabler enables design exploration like never before leading to creation of Design Advisor that enables engineers to have broad view of performance interactions and design parameters.



Work Flow – Driven by MeshWorks

Challenge faced by Body Structure teams.

- Upfront simulation right from concept phase is considered as accelerator in today's compressed product development cycle. The need for quick structure synthesis using member creation tools and morphing tools are certainly required. Parameterization for design exploration would be great advantage. A Design advisor that can present effects of parameter variation on performance readily would enable efficiency like never before.

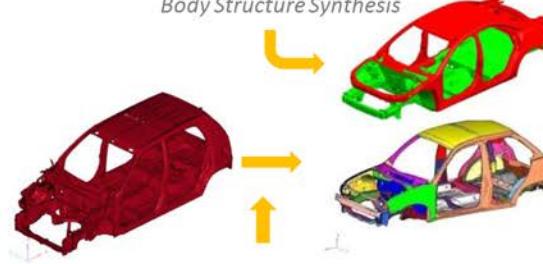
Solution

- MeshWorks with its Morphing and ConceptWorks tools help in synthesis of body architecture very quickly. Be it classical shape change to existing body architecture or cut-stitch and morph approach. MeshWorks enables all of it. ConceptWorks with member and joint creation options eliminate the need to wait for CAD for early stage investigations helping to implement findings from topology optimization. Once Structural synthesis tools are topped up with parameterization design exploration for body architecture gets new dimension. Design Advisor built on Meta Model which is outcome of design exploration really presents visual feel of parameter variations and performance shifts. MeshWorks also has Reduced order model building tools thus ready to help enabling digital twins.

Value

- MeshWorks being a standard best in class pre and post processor has tools that take input CAD and build a solver ready welded body structure or trim body structure models. The IPAAM modules in MeshWorks does help compress and automate lot of activities associated with body structure CAE.
- It is the trio of best in class morphing methods, ConceptWorks tools and extensive parameterization library that make it a game changer for body structure engineers. All the tool sets in one canvas really helps to save over 50% percent time and cost.

Accelerating Upfront CAE with Morphing and ConceptWorks tools for Body Architecture. Body Structure Synthesis



Input CAD to Ready to Run Welded Body Structure CAE model using MeshWorks



MeshWorks based Non parametric and parametric modeling



Optimization, Design Exploration and Design Advisor in MeshWorks

Complete Pre & Post Processor

- Comprehensive FE/CFD pre & post processor with powerful tools for CAD clean-up, meshing (shell, tetra, hexa, hybrid etc.), highly automated model assembly and results processing.
- Complex FE/CFD can be generated 30% faster and with better quality than other competitor products.

Customized Engineering Process Automation

- Customer CAE processes can be rapidly automated using a fast Record>Create-GUI>Plumb>Publish process.
- 2X to 10X time reduction can be expected for processes that are repeatable.

CAD & CAE Morphing Technology

- Reduces Finite Element (FE) & Computational Fluid Dynamics (CFD) model building time by 50% to 80%.
- Generated morphed CAD models representing optimized designs very rapidly and form the main link between CAE & Design teams.

Parametric CAE Technology

- Rapidly converts FE & CFD models to intelligent parametric CAE models, enabling fast design iterations & Design of Experiment (DoE) studies.
- Most comprehensive parametrization engine addressing several categories of parameters such as shape, gage, material, spot welds, seam welds, adhesives, design features, etc.

Multi-Disciplinary Optimization (MDO)

- Enables Multi-Disciplinary Optimization to meet design targets, minimize product weight, and minimize manufacturing cost using parametric CAE models.

