DEP MeshWorks is an advanced CAE platform designed to help companies worldwide accelerate product development, reduce costs, and bring innovations to market faster. It offers a seamless environment for pre- and post-processing, enabling rapid concept CAE and CAD model creation. With powerful features like automated meshing, process automation, concept modeling, and CAD/CAE morphing, MeshWorks has become a trusted tool for efficient parameterization and optimization. Since its release in 2001, it has transformed complex design modifications into streamlined processes, empowering engineers to develop cutting-edge products. The latest MeshWorks 2025 release pushes these capabilities even further, integrating AI-driven automation, enhanced modeling tools, and next-gen simulation techniques to redefine efficiency in engineering.

DEP MeshWorks has introduced several upgraded modules, enhancing efficiency and performance across multiple domains. The ROM module significantly reduces solver time, enabling faster CAE turnaround, while eMOD facilitates EV optimization with parametric CAE workflows for weight reduction and range improvement. Process automation streamlines workflow standardization without scripting, and ConceptWorks enables zero-CAD concept modeling, cutting design time drastically. AI/ML-powered design advisors enhance predictive accuracy, CAD/CAE morphing offers next-gen shape transformation, and advanced post-processing accelerates manufacturable design generation. CAE parametrization expands design space for optimal results, meshing and modeling ensure high-quality mesh with reduced time, MDO balances weight and cost targets, and manufacturing solutions optimize part and tool design with AI-driven automation.

DEP MeshWorks empowers engineers with an advanced, highly automated platform that drastically reduces product development time and cost while ensuring superior design optimization. Its integrated approach across CAE, AI/ML, and process automation enables rapid iterations, minimizes errors, and enhances manufacturability, making it a game changer for industries striving for innovation. By leveraging MeshWorks, companies can accelerate time-to-market, stay ahead of the competition, and drive next-generation product development with confidence.

DEP MeshWorks

Revolutionizing CAE for

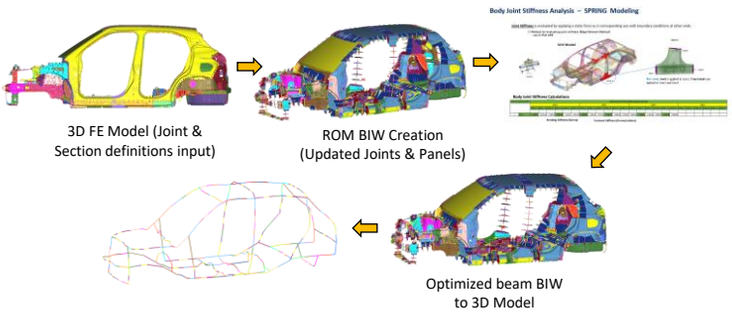
Precision. Intelligence. Performance. Success

Innovative ROM Module:

MeshWorks' highly automated Reduced Order Modeling (ROM) module simplifies ROM creation by converting complex FE models into high-fidelity, parametric models with automated topology intelligence. It offers discipline-specific tools for Crash and NVH, enabling seamless correlation between detailed and reduced-order representations.

Value proposition:

- MeshWorks ROM accelerates CAE workflows by reducing solver time by up to 50%, enabling rapid optimization and seamless conversion from 1D to 3D designs.
- Reduce runtime by 2X to 10X.



3D FE Model (Joint & Section definitions input)

ROM BIW Creation (Updated Joints & Panels)

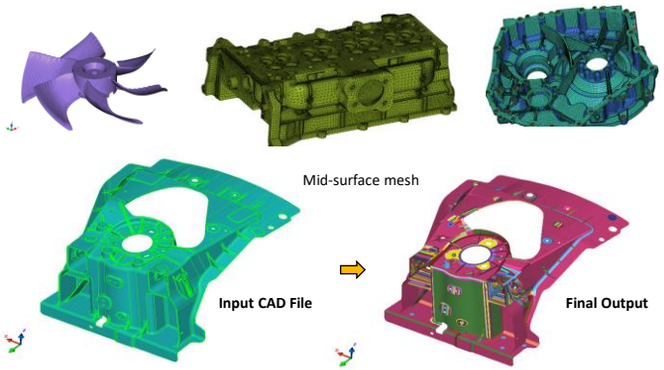
Optimized beam BIW to 3D Model

Next Generation Meshing:

Advanced CAE meshing f50%-timees rapid 2D and 3D meshing with high geometric accuracy using AI/ML-based feature recognition. Its automated, template-driven meshing and feature suppression tools ensure exceptional mesh quality with minimal CAD clean-up.

Value proposition:

- Provides high-quality multi-meshing with up to 50% time savings.
- Ensures superior CAD clean-up and minimal post-mesh corrections on a single platform.



Mid-surface mesh

Input CAD File

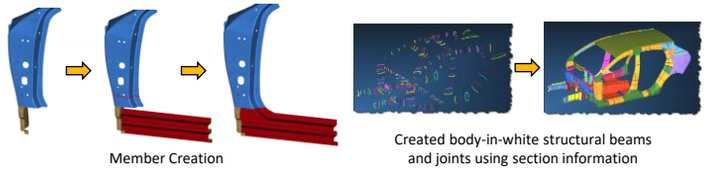
Final Output

Groundbreaking Concept Modeling:

ConceptWorks in MeshWorks enables CAE engineers to create concept models without CAD, using specialized tools for Sheet Metal, Castings, Plastics, Extrusions, and Additive Manufacturing. It simplifies member, joint, and assembly creation with automated features and seamless integration of connectors for ready-to-run CAE models.

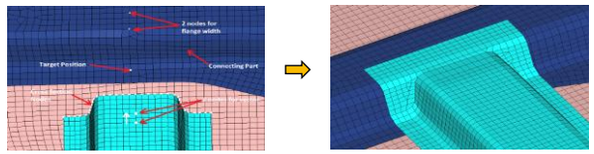
Value proposition:

- Create complete concept parts and assemblies with zero CAD.
- Ensure manufacturing feasibility for all generated concept models.



Member Creation

Created body-in-white structural beams and joints using section information



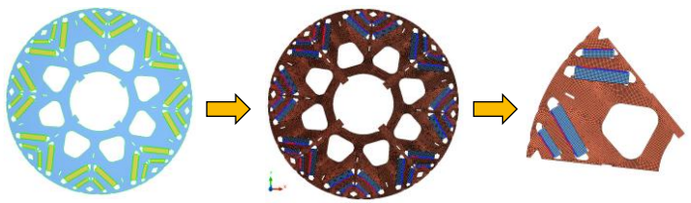
Joint Creation

Productive Electrification Module:

eMOD streamlines meshing, solver interfacing, and electrification workflows, enabling rapid CAE model creation and optimization for structural and CFD analysis while enhancing EV range through optimized design.

Value proposition:

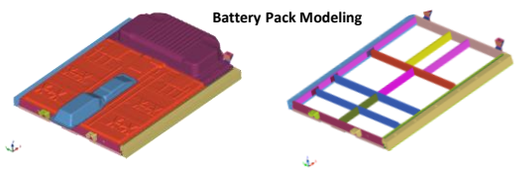
- Achieves reduced modeling time for all EV components.
- Ready-to-use electrification CAE workflows ensure performance optimization for all users.



Input CAD

2D planer Mesh full rotation

2D planer Mesh – Single Pole



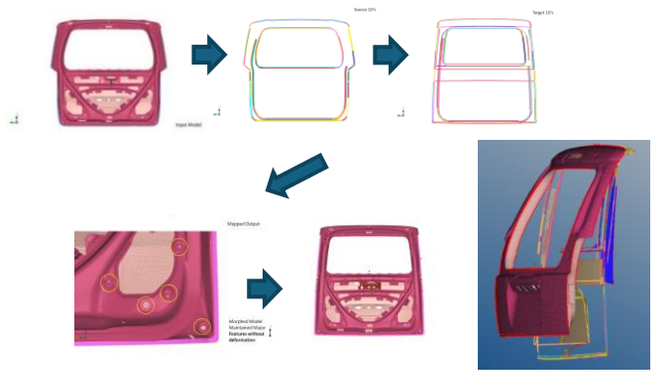
Battery Pack Modeling

State-of-art CAD/CAE Morphing:

MeshWorks integrates all morphing methods into a single user interface, enhancing usability and expanding transformation capabilities like glide and overwrite. With AI/ML-based morphing, section-based, and feature-based approaches, users can intuitively reshape parts, apply parametric changes, and streamline post-processing.

Value proposition:

- MeshWorks CAD/CAE Morphing offers next-gen precision shaping with intuitive controls, enabling effortless full-system transformations with minimal learning and maximum efficiency.
- Models can be morphed within 100th of a millimeter precision.

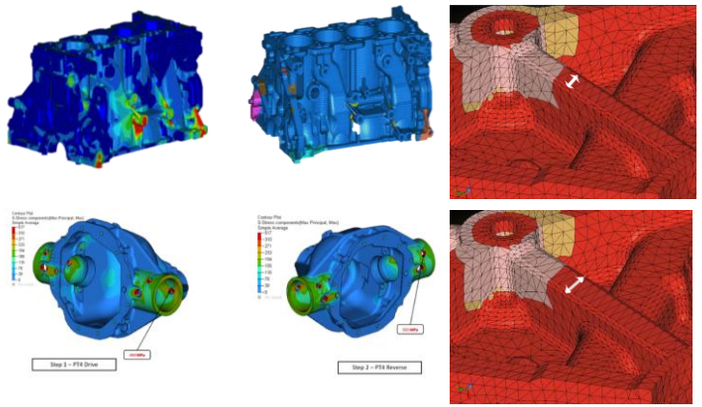


Advanced Post-Processing:

Multi-disciplinary post-processor enables result visualization, automated design improvements, and rapid shape modifications for optimization. With advanced features like animations, contouring, and hotspot detection, it streamlines analysis and accelerates design iterations.

Value proposition:

- Enables a high degree of automation in post-processing.
- Accelerates design improvements with post-processor results.

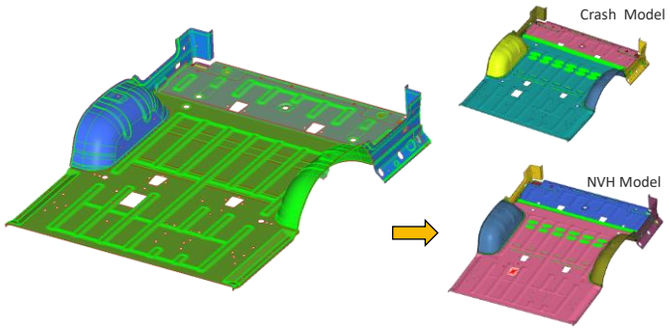


Time-saving MDO:

MeshWorks' parametric and non-parametric CAE models streamline Multi-Disciplinary Optimization (MDO) by enabling rapid parameter transfer across disciplines like Crash, NVH, and CFD. With DOE-based dataset generation and parametric ROMs, it accelerates optimization while reducing analysis time and effort.

Value proposition:

- Optimize weight and cost while maintaining performance.
- Integrates manufacturing, packaging, ergonomics, and other design aspects.

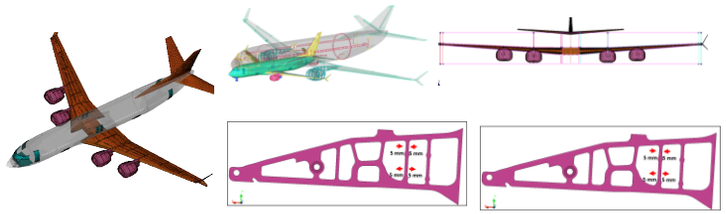


Cutting-edge CAE parameterization:

MeshWorks is a powerful CAE model parameterization engine that streamlines product development with extensive parameter categories across all stages. It enables the creation of intelligent FE/CFD models, automates design iterations, and seamlessly integrates with DOE and MDO processes. With a broad and robust set of ready-to-use design enablers, MeshWorks facilitates rapid multi-disciplinary optimization, allowing engineers to access, modify, and optimize designs quickly and efficiently.

Value proposition:

- MeshWorks CAE parameterization unlocks an extensive design space, offering a wide range of parameter categories that enable rapid multidisciplinary optimization and maximum weight reduction while ensuring performance targets are met.
- Maximize design space with rapid and effortless CAE modifications.

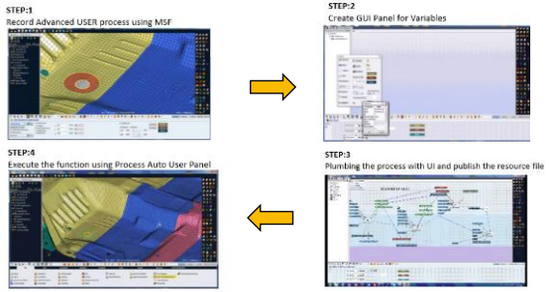


Highly automated Process workflows:

MeshWorks' Process Automation enables rapid automation of repetitive CAE tasks, supporting CAD, meshing, assembly, morphing, parametrization, and post-processing with a no-scripting, drag-and-drop interface. It streamlines CAD/CAE manipulations, standardizes workflows, preserves proprietary functions, and offers a comprehensive list of customized application-specific processes to save time and engineering costs.

Value proposition:

- Increase the modeling speed up to 2x to 5x for various industry applications.
- Customization in the automated workflows for every user-specific scenario.

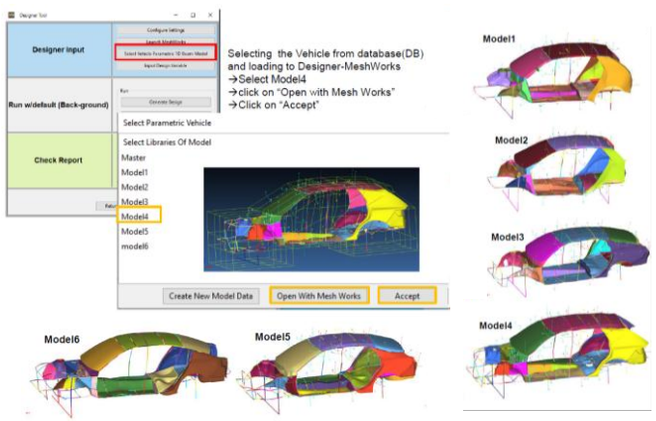


Intelligent AI/ML CAE framework:

The updated AI/ML module in MeshWorks features an adaptive trainer, predictor, auto-parametrization, optimizer, generative AI, and data manager. Built on the Keras library, it enables engineers to create custom designs, streamline workflows, and enhance design efficiency.

Value proposition:

- Unique AI/ML platform with physics-informed neural networks for high accuracy.
- MeshWorks integrates ML with CAE expertise, while AI/ML-driven Design Advisors enhance early-stage development with intelligent guidance and predictive accuracy.

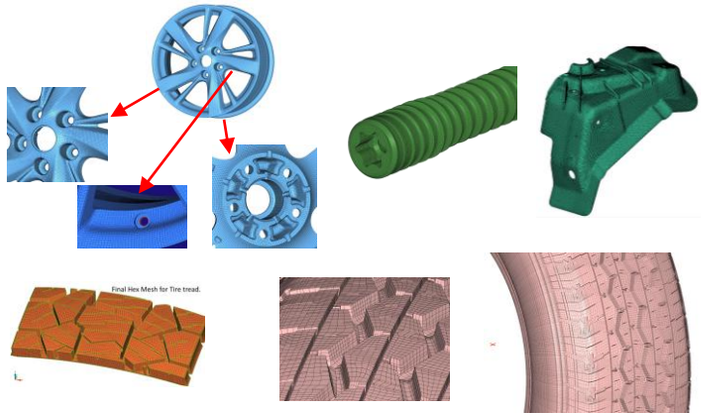


Rapid Modelling:

The Modeling module of MeshWorks provides a vast range of automated assembly functions, including seam welds, spot welds, adhesives, bolts, and contacts, with detailed variations like solid bolts, 1D bolts, and rigid connections. It efficiently handles sheet metal, cast/machined components, and plastic assembly connections with minimal manual effort.

Value proposition:

- Automates assembly with co-creation, weld optimization, and high-fidelity modeling.
- Reduces costs and saves up to 60% in modeling time.

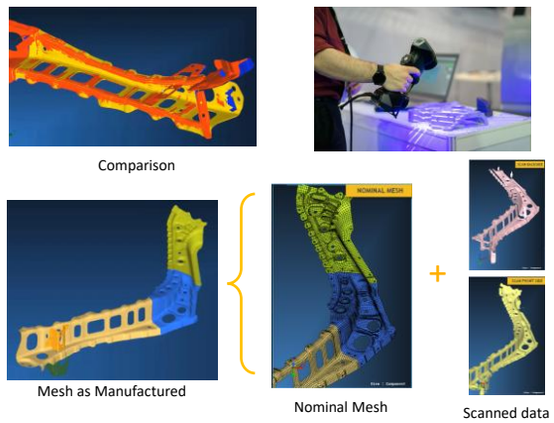


Efficient Digital Twin:

MeshWorks' digital twin solutions enable AI-supported automated meshing by morphing digitized scan data, aligning features, and generating high-quality mid-surface or volume meshes. This rapid process ensures highly accurate mesh representation for efficient CAE analysis.

Value proposition:

- Automates digital model creation for various manufacturing assembly parts.
- Uses morphing intelligence to align nominal FE with scan data, ensuring high accuracy.



Material strength and industry grade are ensured throughout the simulation.

Simple and user-friendly GUI makes the tool easy to use.

Significant time reduction of up to 35% during product development.

DEP MeshWorks Advantages

Multi-industry application with a wide variety of legacy data for support.

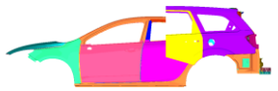
High-quality output with in-depth feature coverage facilitated by the tool.

Optimized design from a weight and cost perspective without compromising performance.

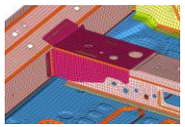
30% Savings On Software Costs | **55% Reduction In Operational Costs**

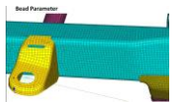
DEP MeshWorks Application At All Stages Of Product Development

CONCEPT



RAPID CONCEPT FE MODEL CREATION WITHOUT CAD

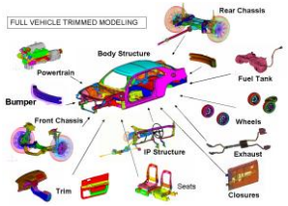




PARAMETRIZATION OF CONCEPT FE

DOE BASED OPTIMIZATION

DETAILED



CAD TO FE RAPID MODELING

DOE BASED OPTIMIZATION

V&V

MINIMAL ITERATIONS

MAINTENANCE

DIGITAL TWIN

ROOT CAUSING & FIXING FIELD ISSUES

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