Detroit Engineered Products (DEP) is an engineering services, product development, software development, consulting, and talent acquisition company. Since its inception in 1998 in Troy, USA, DEP has expanded globally with operations in Europe, China, Korea, Japan, and India. DEP employs an accelerated and transformed product development process, facilitated by our proprietary platform, DEP MeshWorks, which significantly reduces the development time of products across various industries. DEP specializes in automotive interior and exteriors, focusing on delivering powerful solutions that ensure efficiency, flexibility, durability and a quick return on investment.

As automotive OEMs and Tier-1 suppliers race to meet the ever-evolving demands of vehicle interiors and exteriors, DEP stands as a beacon of innovation. In an era defined by disruptive mobility, the infusion of cutting-edge technology into vehicle design has reshaped expectations. At DEP, we seize this opportunity to offer unparalleled interior and exterior trim solutions crafted with next-generation composite materials and advanced manufacturing techniques. From conception to assembly, our process is marked by meticulous attention to detail, ensuring each component meets the highest standards of quality and performance.

Our expertise extends across the entire spectrum of interior and exterior design needs. Whether it's the sleek lines of the dashboard or the rugged durability of the bumpers, DEP excels in every aspect. From initial style feasibility studies to detailed digital and physical validation, we are committed to delivering solutions that not only meet but exceed customer expectations. Furthermore, our proficiency in CAD modeling and engineering ensures not only aesthetic appeal but also functional excellence, with a keen eye on packaging feasibility and legal requirements. DEP isn't just a provider of trim solutions; we are the architects of automotive excellence, pushing the boundaries of what's possible in vehicle design and engineering.

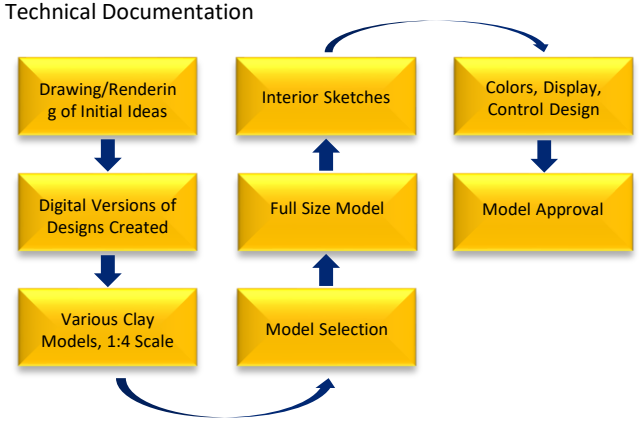
DEP

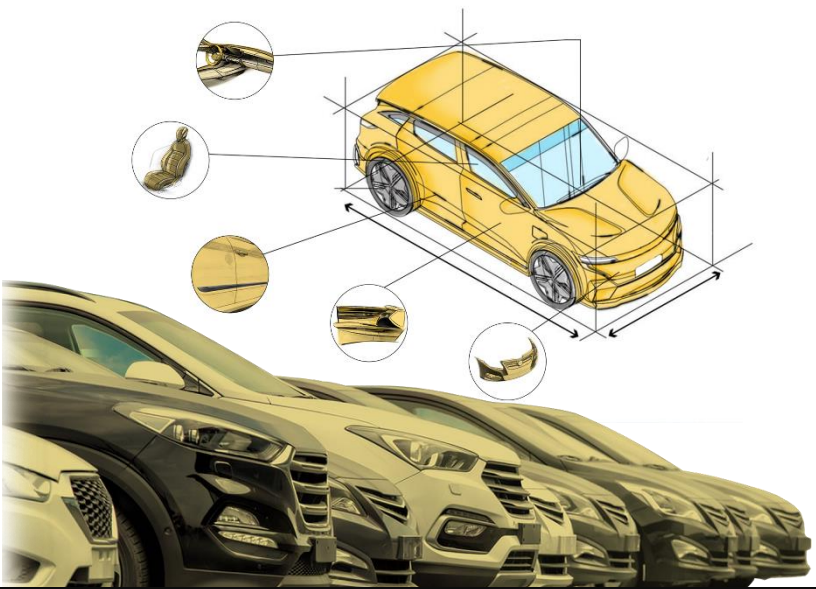
Smarter solutions. Realized.

AUTOMOTIVE INTERIOR & EXTERIOR

Interior/Exterior Design

- Benchmarking
- Reverse Engineering
- 3D & 2D Design, development
- Subsystem Concept Design and engineering
- Component design & assembly
- VAVE – Value Analysis & Value Engineering for Cost & Weight Optimization
- Engineering Change management
- 3D Solid and Surface modelling using Catia V5, NX & SolidWorks
- GD&T drawing for component and assembly
- Tolerance Stack-up analysis using 2D and 3D method using Tc Vis VSA
- Technical Documentation





Interior/ Exterior CAE

CAE Model Creation/ Morphing

- CAE model creation of interior and exterior subsystems per client specifications
- Meshworks software enables around 40% time savings in meshing time compared to traditional meshing tools and methods
- Next Gen Morphing capability helps morph existing CAE model onto new concept math seamlessly

IP/Steering Column Analysis

- FMVSS201 Simulations
- Driver & Passenger Airbag deployment
- IP Modal/FRF Analysis
- HVAC air flow for occupant comfort
- IP thermal gap analysis
- Steering Column/ Steering wheel modal performance

Seat system/Console/Door/Hard Trim Analysis

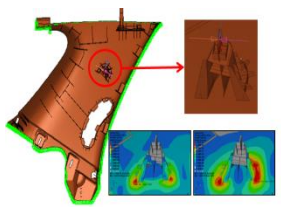
- FMVSS 207/210/208 analysis for Seat systems
- Crashworthiness evaluation of Door trim
- Console/door trim/seat modal analysis
- Stiffness/Strength/Durability analysis for console, pull handle, armrest and pull cup
- Luggage retention analysis
- Thermal(solar) simulation

Exterior Sub-system Analysis

- FMVSS 581/ECE R42 Pendulum Impact Simulation
- Damageability evaluation (IIHS/RCAR)
- Pedestrian Protection simulation
- Fascia stiffness, modal and durability performance
- Headlamp modal and durability evaluation
- Stone impingement assessment
- Power step stiffness/modal evaluation

Moldflow Analysis

- Flow analysis
- Gate location optimization
- Thermal Analysis
- Warpage Analysis



The MeshWorks Advantage

Auto Mid Plane Meshing for Plastic Parts

- Completely automated extraction of high quality midmesh from 3D CAD part
- Hierarchical relationship between the 3D Geometry and Mid mesh enables the modifications effortless

Automated Thickness Assignment

- Completely automated thickness assignment to the mid mesh
- Dedicated tool for layered thickness assignment for Rib with Drafts

Cross Rib/Pattern Rib Creation

- Automated tool that can create ribs on a complicated base mesh.
- Capability to create new ribs intersecting with existing Ribs ensuring proper node to node connectivity.
- Capability to create pattern ribs (HoneyComb or user defined) with absolute node to node connectivity with the surrounding mesh

Seat System Modelling Automation

- Dummy positioning PA
- Seat belt routing PA
- PA for Interface creation between seat structure ,dummy and seat belts.

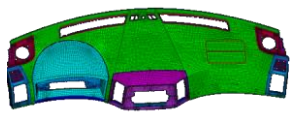
Easy Parameterization of Model

Design features, Structural members, Weld features can be parameterized for setting up DOE runs

Manuf. Variability can be captured

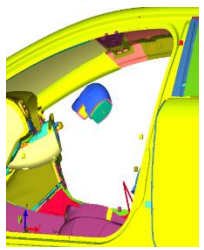
PA is available to quickly map nominal mesh to scan data of the actual manufactured part

Auto Rib Identify



Auto Bolt Connection (1D)

Auto Seamweld Generation (3D)



Auto Contact Generation

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