



 **Automotive**
Design and Manufacturing

Trusted Partner to Global Automotive Companies for more than a decade
Providing end-to-end Engineering Solutions
From Concept to End Product
Covering Design, Analysis, Testing, Prototyping and Manufacturing



200,000+ man hours of experience in automotive domain

- Worked on 100+ car / truck programs
- 50,000+ man hours and 150,000+ machine hours of experience in FEA
- Well versed with standards of global OEMs
- Best-in-class automotive engineers & designers



- Complex FEA validations for automotive systems (as per FMVSS, ECE, CMVSS etc)
- Supporting customers with design & validation through FEA
- Developed complete Truck Seat within 12 months using Concurrent Engineering Approach

ONE STOP SHOP for

| Cost effective & innovative designs

| Reduced development cycle time & time to market

Offering Comprehensive Prototyping and Manufacturing Services to Global Customers
Catering to Low, Medium and High Volume Demands with High Quality
Well established and Strong Network of Specialist Manufacturing Partners.



Prototyped and Produced 300+ Automotive components

- Molding machine up to 500 Ton
- Metal stamping press
- CNC machines
- 5 axis and 3 axis milling machines
- SLA, SLS, FDM machines
- CMM machine
- Optical comparator
- Blue LED Scanner



- Wire cutting & Die sparking
- Machining (Grinding, Lathe, etc.)
- Welding unit with special welding machines
- Fixture Fabrication, Assembly & Testing
- Durability testing
- Strength testing
- Measurement laboratories

Molding (tooling and production) | Precision Machining | Sheet Metal, Castings

ONE STOP SHOP for

| Prototyping , Production and Testing

| High and Low Volume Production of high quality products

VAIVE of Floor Console for an Automotive OEM

Scope:

- Integration of 5 piece design into 2 piece injection molded components
- Design of integrated AC duct based on styling inputs
- FEA analysis to validate the integrated design

Challenges:

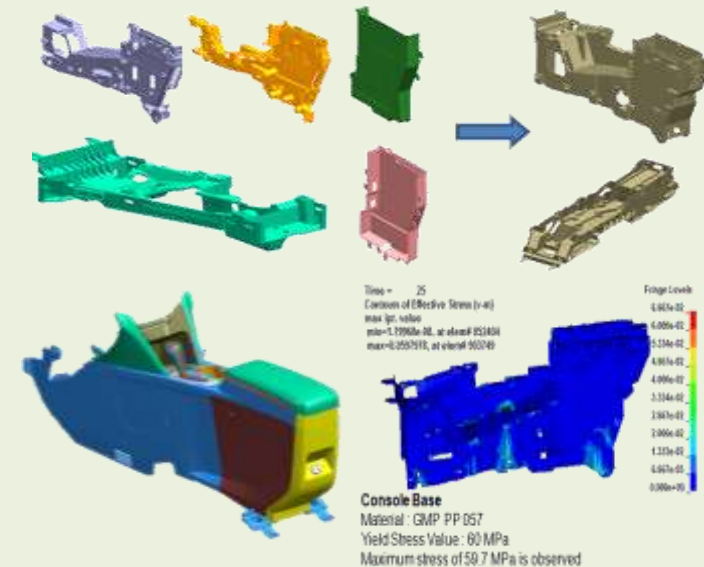
- Design for manufacturing, assembly and fit & finish requirements
- Achieving the strength and rigidity targets for the Assembly

Key Highlights:

- Adapted MUCCELL Moulding technology parameters in design
- Tooling feasibility study carried out and minimized tooling cost

Value Addition:

- Number of tools reduced from five to two
- Ease of Assembly & simplified complexity



Aktis develops a complete Truck Seat for USA Market

Scope:

- Development of complete seat including Foam, mechanism, structure
- Validation of seat as per the FMVSS regulations

Challenges:

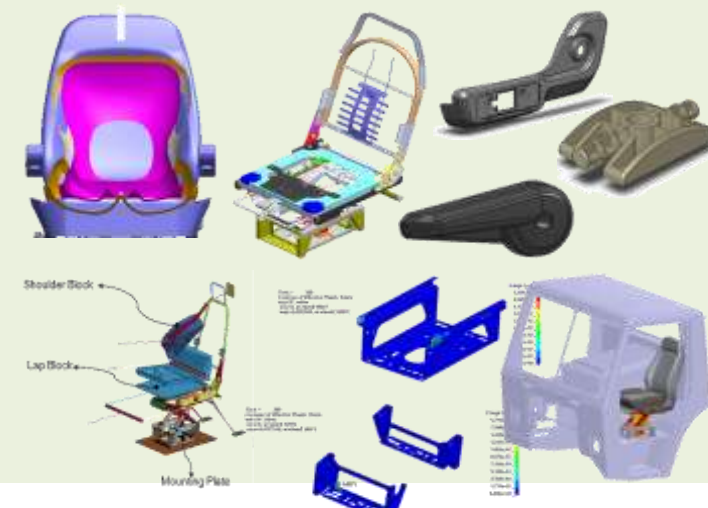
- To achieve the weight target without affecting the functionality
- Achieving the required comfort and mechanisms within available space

Key Highlights:

- Packaging study for the truck cabin
- Validation phase results matching with test results

Value Addition:

- Quick turn around time from design to release
- Minimized the manufacturing cost by combining / eliminating parts



Aktis trusted With the responsibility for Design And Development of Bumper for Automotive OEM

Scope:

- Complete design & development of Automotive Passenger Car Bumper
- Development of B-side attachments to interface with vehicle, interlock features
- Validate the design for crash performance through FEA

Challenges:

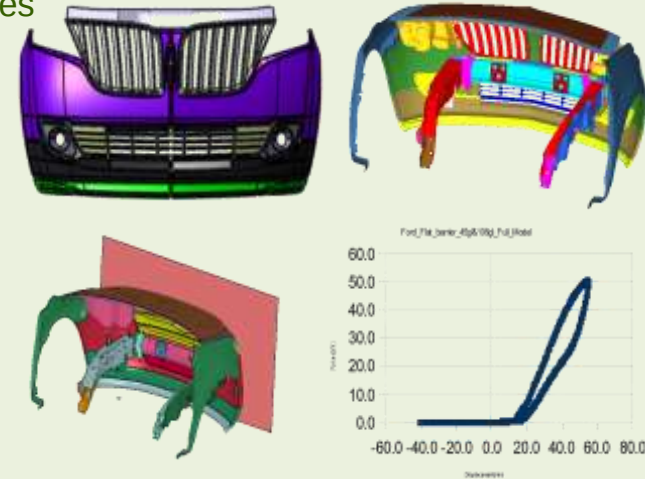
- Maintaining required tolerance and fit / finish requirements
- Design modifications to strengthen as per the impact analysis results

Key Highlights:

- Part validation for manufacturability done with customized design checker
- FEA design suggestions adequate to pass the regulations

Value Addition:

- Design validation iterations reduced by 50%
- Tooling feasibility achieved with minimum side cores/lifters



Aktis designs a Column Shroud for European Automotive OEM

Scope:

- 5-part design of the shroud
- Design considering the environment data, manufacturability and assembly

Challenges:

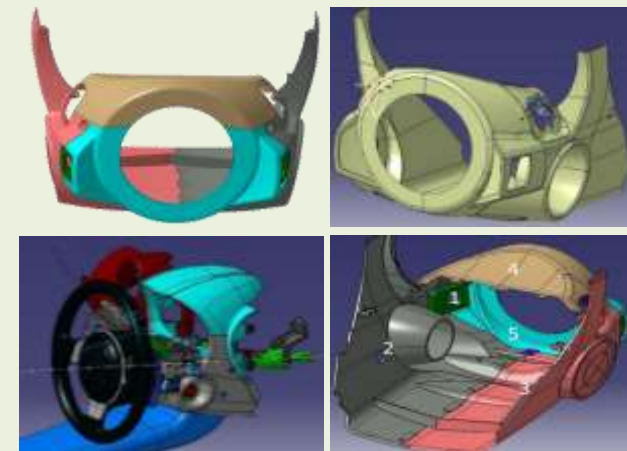
- Design components for adequate clearances and tolerances
- Packaging design considerations for shroud and its components

Key Highlights:

- No fasteners used for attachments
- Fit and finish achieved as per customer standards

Value Addition:

- Quick turn around time from concept to prototype and production
- Simple tooling requirement considered in design phase for reducing tool cost





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Thank You

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