



## **Technical Capabilities**

Meridian is an OEM and TS16949-certified “Full-Service Supplier”, providing industry-leading engineering expertise and capabilities to support your program from initial concept to finished product.

## **Program Management**

- Meridian uses a disciplined, structured process for managing the development and launch of new products.
- At program inception, a Cross Functional Team, Engineering Champion, Manufacturing Champion and required deliverables are established.
- An intranet-based program management system is used to assign and track the completion of deliverables and monitor program timing, issues and costs.

## **Concept Development**

- Meridian's highly trained staff of engineers and industrial designers turn our customer's "wants" into innovative, functional, product designs using everything from paper and pencil to sophisticated computer-based (ALIAS) graphic design tools.

## **Computer-Aided Product Design**

- Meridian's design staff is experienced in designing a broad range of metal, plastic, and composite components and assemblies.
- Our design centers are committed to keeping current with the latest in CAD technologies including Unigraphics, CATIA, SDRC-IDEAS, VisMockup and Pro-Engineer.
- CAD data is managed through the use of TeamCenter PDM, and is shared with our key customers and suppliers via secured web channels, AUTOWEB, and the Automotive Network Exchange (ANX).

## **Finite-Element Analysis**

- Meridian's dedicated team of structural analysts builds computer models and simulates real-world load cases to validate and optimize our product designs and manufacturing processes.
- Meridian utilizes a suite of analytic tools including: Hyperworks for pre- and post-processing and visualization; LS-Dyna for static and dynamic nonlinear analysis; and OptiStruct for static linear and modal analysis.

## **Prototyping**

- Meridian's in-house rapid-prototyping centers can fabricate functional mockups using one of several techniques including silicone molds, FDM (fusion-deposition modeling), hand forming, fiberglass, thermoforming and vacuum forming.
- Meridian can also deliver production-representative prototypes using soft tooling (epoxy, Kirksite, aluminum) or pull-ahead (steel) tooling.

## **Validation Testing**

- Meridian provides extensive product validation testing (DV, PV, CI) through its two dedicated Michigan test facilities.
- Test engineers develop test fixtures and procedures, and conduct validation tests to ensure product quality, durability, and performance.
- Meridian's Grand Rapids center focuses on the testing of raw materials and lighting products, while the Ionia center focuses on bumper systems, composite assemblies, and hitches.

## **Innovation Engineering**

- Meridian is a leader in the development of innovative materials, processes, and applications to provide our customers with cutting-edge solutions.
- Our dedicated Research and Development, Advanced Engineering, and Design Cost Reduction groups create unique technologies, benchmark competitive products, commercialize new applications, and improve the value of existing products.