

Digital Prototyping for the Aerospace Supply Chain

Autodesk® provides aerospace suppliers with solutions to experience their ideas before they are built.

Digital Prototyping helps us make engineering changes, see the impacts visually, adjust them aesthetically, and then develop the tooling. It's an amazingly efficient process.

—Richard Schulz
Managing Director
ADEPT Airmotive

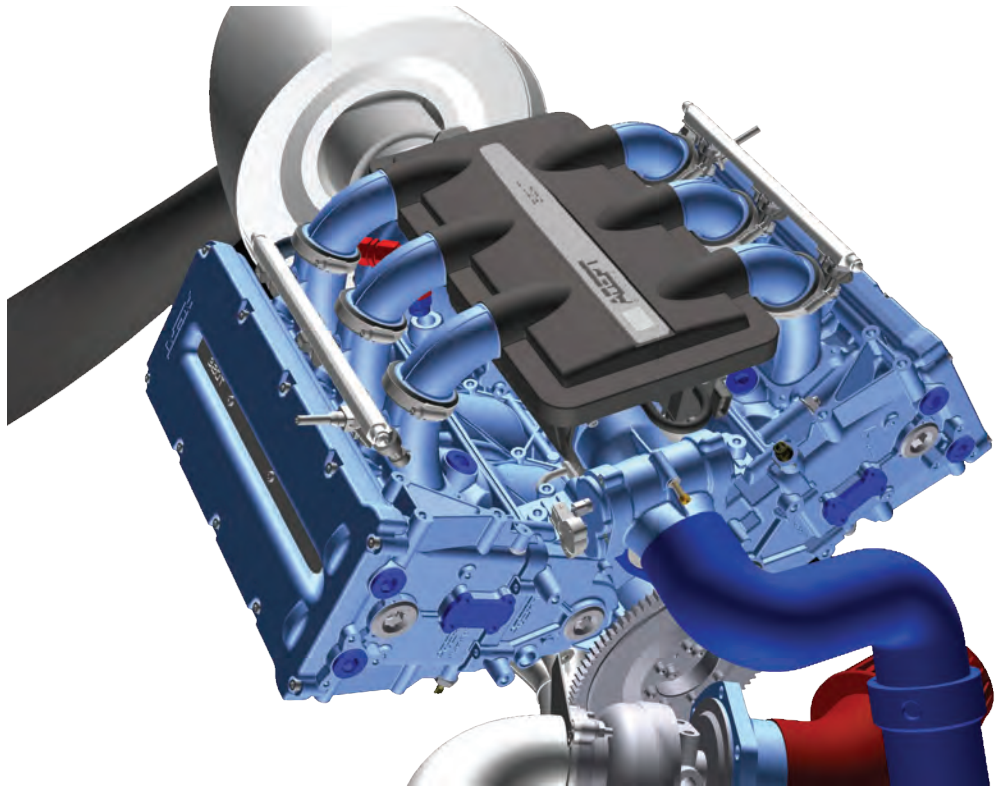


Image courtesy of ADEPT Airmotive.

Aerospace suppliers operate in a complex and demanding environment. A global, multi-tiered, interdependent supply chain collaborates to provide design, production and maintenance services to OEMs and operators. And now they face a changing business model in which large manufacturers are relying on middle tier suppliers to take on more responsibility and shared risk for design and manufacturing.

To succeed in this market, aerospace suppliers must be able to differentiate themselves from a growing number of global competitors. They need to be able to effectively collaborate throughout a multi-disciplinary and geographically dispersed eco-system, improve process efficiencies to speed up product delivery, and reduce costs to remain competitive.

The Autodesk solution for Digital Prototyping allows aerospace suppliers to streamline their design process and increase communication with the key stakeholders. By virtually exploring a complete product before it becomes real, they minimize risk and are more confident in taking on additional responsibility. To differentiate themselves from the competition, the Autodesk® solution for Digital Prototyping gives aerospace suppliers the ability to better design, visualize and simulate their product with less reliance on costly physical prototypes – thereby improving time-to-market and increasing competitive advantage.



Images courtesy of Bombardier, Inc.

Autodesk® Inventor® software takes aerospace suppliers beyond 3D to Digital Prototyping, enabling a single digital model to be maintained throughout the engineering environment, supporting critical supply chain disciplines such as mechanical design, electrical design, routed elements design, dynamic simulation and performance analysis. The form, fit, and function of the design can be validated as work progresses, minimizing the need to test the design with costly physical prototypes. Native translators provide the ability to collaborate more effectively in a multi-CAD environment.

With Autodesk tools, aircraft interior designers can leverage the digital prototype throughout the product design process from sketching through design modeling, visualization and decision-making and final technical surfacing. These tools enable industrial designers to work collaboratively with engineers, using one model to balance aesthetic and functional requirements. Design intent is maintained when the conceptual design moves into the engineering phase as production-quality geometry, is able to move back and forth between design and engineering applications in a collaborative product development process.

Autodesk tools facilitate the integration of product design data for downstream applications like fabrication and assembly processes. Inventor provides the ability to associatively work with 3D tool, jig, and fixture designs and 2D equipment layouts while incorporating 3D product design data from other CAD solutions. By simulating and visualizing the fit and function of equipment and tooling, aerospace suppliers can more effectively develop and optimize their manufacturing processes before committing a project to manufacturing. Facility and manufacturing engineers can create a whole project view to help improve design decision-making, construction implementation, and performance prediction and planning, as well as management and operation of the facility.

Throughout the entire product development workflow, from initial concept to final product build, Autodesk software tools improve the design collaboration that is so critical to an interdependent supply chain. Different workgroups can review, measure, mark up, and track changes to the digital prototype. This allows for better reuse of crucial design data, management of bills of materials (BOMs), and documentation with other teams and partners for processes such as maintenance and repair operations. Tightly integrated data management applications enable the efficient and secure exchange of design data between teams or between suppliers. And suppliers can reduce errors and waste associated with engineering change orders by generating manufacturing documentation directly from the validated 3D digital prototype.

The Inventor-based Digital Prototyping solution gives aerospace suppliers the ability to design, visualize, and simulate products at every stage of product development, from conceptual design and engineering through manufacturing. The Autodesk approach to the product development process takes aerospace suppliers beyond 3D to Digital Prototyping to explore their products' real-world performance—so they can reduce their dependence on physical prototypes and get more innovative products to market faster.

Learn More or Purchase

Design, visualize and simulate products from the conceptual design phase through the manufacturing process.

For more information, visit www.autodesk.com/aerospace.

To purchase Digital Prototyping software, contact an Autodesk Premier Solutions Provider or Autodesk Authorized Reseller.

Locate a reseller near you at www.autodesk.com/reseller.

We completed all our designs in Inventor. As a result, when we laser-cut parts, we knew that they would all fit when we put them together because we'd already analyzed the motion of the assembly.

—Chuck Wiplinger
Chief Engineer
Wipaire