



Aircraft design solution from IBM

Innovate your core business

Structural aircraft design is one of the most resource intensive and time-critical processes in developing a new or derivative aircraft. With our aircraft design solution, IBM's best of breed aircraft design solution, you can incorporate an integrated product development process to reduce cycle times and cost. Through the adoption of common methods and processes across the extended enterprise, our solution facilitates collaboration and links innovation to development.



Aircraft design with a competitive advantage

Drawing on our experience of working closely with aerospace clients, we have developed the aircraft design solution to address the specific transformation needs of our customers in structural aircraft design and manufacturing.

- For more than 20 years, IBM and Dassault Systemes have led the market in the provision of engineering solutions to the aerospace industry, including companies such as Airbus, United Airlines, Lockheed Martin, EADS and Aircraft Engineering Corporation.
- Our product lifecycle management solutions have proven instrumental in capturing, managing and sharing corporate know-how.
- IBM possesses a comprehensive and integrated solution portfolio, and has implemented more than 10,000 successful product lifecycle management solutions.

Leverage best practices

With the instatement of lifecycle-driven engineering, you can align processes with best of breed structures engineering practices. We can help you deploy an integrated set of common tools and methods across the extended enterprise to enhance your aircraft design processes.

- Increase innovation and quality through greater aircraft design accuracy.
- Incorporate simulation and mechanics studies to digitally verify your products, before the physical building process ever begins.

- Take advantage of early input and communication between design, manufacturing and service engineering teams for more effective teamwork and greater productivity.
- Make knowledge-based decisions early in the process, when they have the greatest impact.

Proven methods and technology

Your current aircraft design program's processes need to become more efficient in order to keep costs low. Our best of breed aircraft design solution offers a proven means to reduce cycle times, cost and risk.

- Speed time-to-market by giving engineers the ability to complete concepts faster and make needed iterations much earlier in the aircraft design and production process.
- Minimize costly aircraft design errors with standardized functionality, and improved collaboration and decision making.
- Decrease production costs with improved productivity and fewer physical prototypes.

Sustain competitive advantage

Today's aircraft design programs necessitate the ability to use a common set of processes and methods across the extended enterprise. Let IBM give you greater flexibility and functionality in developing mechanical, sheet metal, composites and complex parts. From aircraft design through analysis and manufacturing and on to production, you can enhance quality through virtual prototypes and secure the right data at the right time.

Innovate your core aircraft design business

Our best of breed aircraft design solution leverages years of experience, advanced aircraft design techniques and intellectual capital.

- Product lifecycle management (PLM) solutions from IBM have become the industry standard for OEMs, supply chain partners and suppliers.
- We have created an Aerospace Center of Competency to help our clients develop product lifecycle management best practices.

- Our solution includes a full services engagement—we begin with an introduction to possible improvement areas, followed by an assessment to target and prioritize improvement areas, and finally we develop a mutually agreeable deployment roadmap.

Leverage best practices in aircraft design

The development of aircraft structures can vary greatly from company to company, but to extract the maximum value from the product development process, it is necessary to focus on the methods, tools and approaches used for common typical tasks. Functional benefits of our solution include:

- Standardized aircraft design approach
- Catalog of components
- Linkage to manufacturing
- Mirror part technology
- Automated reports
- Integrated and associative structural analysis
- Motion simulation
- Knowledge integration

Our best of breed aircraft design solution addresses eight key sub-processes from aircraft design through manufacturing of structural parts and assemblies. The following solution components are integrated to accomplish these benefits:

- Relational aircraft design for lofting and preliminary structure
- In-process computer aided engineering for airframe structures
- Aircraft variants commonality maximization
- Aero-shape machined part aircraft design to manufacturing
- Aerospace sheet metal part aircraft design to manufacturing
- Composite part aircraft design to manufacturing
- Jigs and tools aircraft design to manufacturing
- Knowledge-based engineering for airframe assembly design

Proven results

A variety of client examples and case studies verify the results and value of our best of breed aircraft design solution. Here's what some of our clients are yielding:

- Lofting and relational design—realized savings greater than 50 percent on aircraft design and change times

- Knowledge-based automation—used five starter templates to generate 100 wing ribs, automated analysis and manufacturing operations, as well as the drawing generation process
- Numerical control (NC) modeling—reduced time spent by 25 percent, reduced programming time from 15 percent to 20 percent, and increased workforce productivity 33 percent
- Early aircraft design and manufacturing involvement—provided reduced cycle times and lower-weight components

Compress cycle times to reduce costs

Our best of breed aircraft design solution offers a wide range of aircraft design cycle capabilities to derive quantifiable results and reach your production goals.

- Reduce production cycle times by harnessing the ability to capture, share and reuse designs and standardize parts.
- Minimize costly mistakes and iteration frequency with easy-to-use tools that link between aircraft design and manufacturing data, and give more precise insight into aircraft design and compatibility.

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