

Case Study



Infosys and Triumph Composite Systems Collaborate to design and develop floor panels for the Airbus A380 Freighter

The Client

Triumph Composite Systems, Inc., based in Spokane, Washington, is an aerospace industry leader manufacturing high quality composite interior components. Viewed as a leader in Lean Manufacturing principles, Triumph Composite Systems is highly skilled in the production of aerospace composite assemblies including floor panels, glare-shields, drip-shields, side-wall risers, aisle stands, mixer bay manifolds and other air control system ducting.

Business Need

Infosys' participation in the bid process was a key factor in Triumph Composite Systems award of the Airbus project for freighter floor panel design and build. The unique partnership complemented the expertise of both companies — Triumph Composite Systems, being a leader in manufacturing aircraft floor panels, and Infosys, a leading aircraft design house with a proven record of executing similar projects.

Together, Infosys and Triumph Composite Systems are providing end-to-end floor panel solutions to Airbus. Infosys' role is to provide design and analysis support on composite sandwich floor panels for the freighter aircraft. This includes design of floor panels and their connecting sheets for both upper and main decks. Infosys partnered with Triumph Composite Systems to create a workflow, depicted below, that aligned the key strengths of the joint team across the design and build stages.

Project Challenges

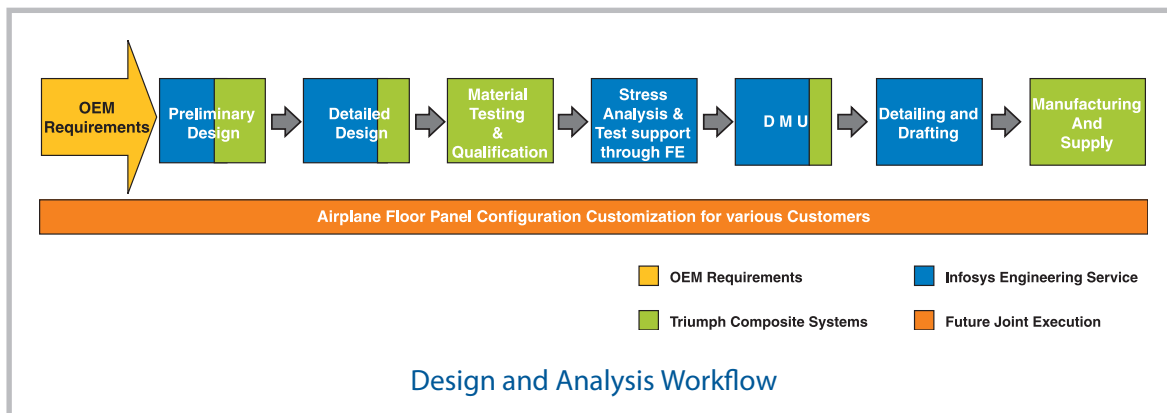
Infosys and Triumph Composite Systems face a host of ongoing challenges in delivering the floor panel project. The project involves many execution and technical challenges.

Execution Challenges

- Establishing and maintaining effective communication among teams located around the globe, including Germany, the U.S. and India.
- Multicultural project environment which requires interaction directly with Airbus, and the multitude of suppliers of both Airbus and Triumph Composite Systems.
- Managing project time lines and costs against changing project schedules.

Technical Challenges

- Complex design, stress, manufacturing, tightness and assembly requirements.
- Optimization of the floor panel layout to meet the stringent weight requirements.
- Evaluation of alternate interface design solutions.
- Finite element simulations and test validation with limited material data.
- Requirement to quickly conform to Airbus-specific processes, procedures, systems and tools.
- Large data transfer requirements among multiple locations.
- Use of specialized software in complex IT environments of Airbus and Triumph Composite Systems.
- Complex Digital Mock-up (DMU) structures along with numerous assembly and installation drawings.



The Infosys Approach

Infosys is leveraging its rich expertise in the design and analysis of Aerospace structures — both metallic and composites. The Infosys team, which has been involved in leading aircraft programs for Airbus as well as Indian aeronautics and space programs, is experienced in the design and development of various composite sandwich panels. The team is drawing on this broad experience while executing this project. The project is being executed in two phases — namely, the common phase and the detailed design phase. The first phase, executed at locations in Germany and India, entailed the following activities:

- Understanding project-specific requirements of Airbus' processes, methodologies and tools.
- Detailed understanding of the floor panel design/ analysis requirements.
- Interacting with floor panel interface design teams and collecting interface requirements.
- Preliminary floor panel design.
- Creation of DMUs in a VPM environment.
- Creation of interface design principles, interface and frontier drawings.

Currently, the detailed design phase is in progress at multiple project locations. This phase involves the following activities:

- Creating detailed 3D models for each floor panel by providing necessary cut-outs for interfaces.
- Creating panel assembly drawings.
- Creating installation drawings for each section of the upper and main decks.
- Performing detailed stress analysis of critical floor panels through finite elements.

Infosys and Triumph Composite Systems are working as a team to meet stringent project requirements and time lines.

Client Benefits

Infosys successfully complements Triumph Composite Systems' manufacturing capabilities with proven composite design and analysis expertise.

- Infosys' engineering services enabled Triumph Composite Systems to provide an end-to-end floor panel design, development and manufacturing capability, which was a key success factor in their bid for the Airbus project.
- Triumph Composite Systems' manufacturing expertise and Infosys' design and development expertise have helped in project execution. Infosys, with its excellent global infrastructure and connectivity, has executed the project successfully at multiple locations globally.
- Infosys is enabling Triumph Composite Systems to meet the demanding design cycle times. Implementation of the Infosys Global Delivery Model has enabled the project team to control cost while optimally utilizing project resources. Infosys' flexible deployment of resources during execution has enabled Triumph Composite Systems to meet Airbus' prolonged project time lines.
- Design innovations are helping to achieve Airbus' weight reduction and cost expectations. Additionally, the ability to identify and resolve issues jointly has helped both teams maintain project time lines while minimizing costs.

About Infosys

Infosys (NASDAQ:INFY) is a global leader in the “next generation” of IT, engineering and consulting with revenues of over U.S. \$2 billion dollars. Today it is the highest ranked IT Services Company in the world in the annual BusinessWeek IT 100 rankings. Infosys has raised the bar in delivering business value and delivery predictability with its unique Modular Global Sourcing Model. AS/EN9100 and ISO/CMM Level 5 certified, Infosys has built a strong presence in Aerospace and Defense through developing innovative IT and Engineering solutions across the value chain for clients, enabling them to become more competitive. Infosys works with strategic alliance partners to build and market unique solutions that address the current needs of the aerospace and defense industry. Experience Infosys and you'll experience the true advantages of the flattening world.



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About Infosys

Many of the world's most successful organizations rely on Infosys to deliver measurable business value. Infosys provides business consulting, technology, engineering and outsourcing services to help clients in over 30 countries build tomorrow's enterprise.

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