

4 Additive Manufacturing Developments of 2018 in the Aerospace Industry

New custom aircraft interior possibilities



Thanks to the latest developments in 3D Print with multi material/ multi-colour technology and advanced product realism, the use of additive manufacturing technology is enabling engineers to take a unique perspective when developing aircraft interiors.

Utilising the full colour, multi-material capabilities of the Stratasys J750 PolyJet 3D printer, and the tough, functional and aerospace certified materials of the Fortus FDM production series, designers can rapidly iterate through design concepts and then accurately simulate the final aesthetic characteristics of custom fixtures and fittings such as seat arm rests, interactive entertainment systems, video displays and remote consoles. With these two Stratasys technologies, designers and engineers are also able to create multiple replacement parts to store large inventories, customize parts to match the brand image and to create complex specialised parts.

Thanks to 3D print, Brand customization is now much easier to implement and much more economic for producing on a commercial scale.

Extended government funding - The DRAMA project



The DRAMA (Digital Reconfigurable Additive Manufacturing Facilities for Aerospace) project is a 3-year scheme led by the Manufacturing Technology Centre, which aims to establish world class test bed facilities where aerospace suppliers will be able to test products and processes in a virtual AM facility. The project is supported by the likes of Autodesk, Midlands Aerospace Alliance, University of Birmingham and more, and has so far received a £15 million investment from the Department of Business, Energy and Industrial Strategy.

What does this mean for UK businesses?

It means Aerospace manufacturers will have a place to explore the use of AM technology and get to understand its full capabilities in an environment that will ensure the development process is effective with less trial and error.

This means AM technology is beginning to become even more accessible to all aerospace manufacturers and here at Tri-Tech 3D, we look forward to creating new partnerships with these companies.

Stratasys new PEKK-based material



Stratasys have recently introduced their strongest performing thermoplastic yet to the market. The PEKK-based Antero 800NA has superior chemical resistance and ultra-low outgassing, in addition to high temperature resistance and exceptional water properties.

Superior chemical resistance means the material is ideal for creating components that will be exposed to hydrocarbons, such as fuels and lubricants, as well as many acids. What's more, low outgassing allows it to be used in confined spaces and sensitive environments, such as satellites, where materials may not outgas under vacuum. Antero 800NA's high operating temperature is designed to allow it to be used for applications under the hood or engine compartments.

The Stratasys PEKK-based Antero 800NA material is aerospace certified and available for use on the Fortus 450mc/900mc machines, making it an ideal choice for the aerospace industry.

Stratasys enhanced traceability



Traceability is an important factor in the manufacturing of components for Aerospace and has previously held the Aerospace industry back from adopting AM technology. However, following a qualification method approved both by the FAA (Federal Aviation Administration) and EASA (European Aviation Safety Administration), Stratasys have recently launched the qualification of FDM technology as a new configuration of the Fortus 900mc. This provides Aerospace companies with a faster, more streamlined solution (fully traceable and qualified material, controlled and qualified process + more reliable and better performing hardware configuration) with the establishment of design allowables for Ultem 9085 resin material, approved by the US National Centre for Advanced Materials Performance (NCAMP), as well as an equivalency toolkit and process control document included to ensure consistent build results to show equivalency to the design allowables (B-basis).

This new process means it's much easier for Aerospace companies to ensure compliancy when using AM technologies.

It's an exciting time to be in the Aerospace industry and technological advancements are developing at a higher rate than ever before. From the Farnborough Air show to the government backed latest AM projects and new Stratasys material and machine advancements, the Aerospace industry is developing at an outstanding rate. As a Stratasys and Desktop Metal platinum partner, Tri-Tech 3D are looking forward to developing strong relationships with both current and future Aerospace companies and are excited to see what's next in terms of AM capabilities in the Aerospace Industry.

Interested in AM technology? Give us a call to discuss your companies needs and our team will be able to offer honest advice on whether it's right for you. Call us on 01782 814 551 or email info@tritech3d.co.uk