



wipro 3D



AEROSPACE

Component
High Pressure Compressor Stator

Material
Ti6Al4V

The Aerospace industry has been at the forefront of adapting Metal Additive Manufacturing (AM) and some of the most evolved applications of metal AM can be found in the aerospace sector. Leading OEMs, tier 1 suppliers, and key ecosystem players are in the phase of developing mature capabilities in metal AM.

Typical value contribution from Metal Additive Manufacturing comes in form of weight reduction, reduction in sub-assembled parts by creating monolithic designs, ability to realize complex designs and drastic reduction in lead time to realize components.



— ABOUT THE PROJECT

Wipro 3D helped a leading aerospace manufacturer to realize the High Pressure Compressor Stator in Ti6Al4V using metal AM.

The Stator converts kinetic energy into static pressure through diffusion and redirects the flow direction of the fuel, preparing it for the rotor in the next stage. The Stator has been tested at a 100% ground speed well over 150 hours of operation in a prototype jet engine.



— AM COMPETENCIES USED

Due to its large size, the Stator was creatively sectioned into different zones to achieve the desired geometry, dimensions and functionality.

A series of well-planned post processing activities were coordinated and executed to achieve the Stator's desired features critical to performance i.e. particularly surface finish and weight.



**ADDITIVE
DESIGN &
ENGINEERING**



**POST
PROCESSING**



**DESIGN
FREEDOM**

With very short “Redesign-to-realize” cycle time and with the process package established, the customer has now redesigned the Stator to validate an alternate strategy.



TIME-TO-REALIZE

The complete design to realize lifecycle for the Combustion Chamber was done in less than 5 months, a drastic time compression compared to the traditional 14 months.

About Wipro 3D

Wipro 3D is an AS9100 Certified metal AM solutions and services provider, serving Aerospace, Space, Defense, Industrial, Heavy Engineering, Automotive, Energy, Nuclear & Healthcare sectors. Our solutions include AM Consulting, Additive Engineering & Design Offerings, Manufacturing Services, Research & Development based solutions right unto Design - Deployment and Operation of captive metal AM centers.

Visit: <http://wipro-3d.com> to learn more