

Application Example: 3D Scanning/Quality Control Mahindra Aerostructures AirVan 10 Jig Assembly Analysis

Measuring Systems: Tritop, ATOS Compact Scan
Keywords: 3D Scanning, Aerospace, Aircraft, Quality Control

As part of their stringent aerospace standard quality control process Mahindra Aerospace contracted Scan-Xpress to measure and validate the geometry of their jig assemblies used for the manufacturing of their AirVan 10 platform.



In total there were four assemblies scanned including the:

- Cockpit jig
- Tailcone jig
- Left wing jig
- Right wing jig

In order to gain a complete understanding of their manufacturing process the jigs were first scanned in isolation and then scanned again with the completed assembly laid up into them. Important datums including bolt holes, pins, planes and other fasteners and interfacing areas were captured to a high level of accuracy as well as the full geometry of the part.



SCAN-XPRESS

EXCELLENCE IN 3D MEASUREMENT

Finally the component was re-installed into the assembly and was scanned in situ.



SCAN-XPRESS

EXCELLENCE IN 3D MEASUREMENT

The high density point cloud data was polygonised to create an STL mesh. Primitive geometric shapes were fitted to the various fastening elements (cylinders, planes etc) and XYZ datum coordinate points were extracted. These coordinate points were named according to the original design specifications and delivered to the client in IGES format as well as ASCII/Excel Spreadsheets enabling them to quickly and easily compare to the actual jig to the original CAD model.

Scan-Xpress would like to thank Mahindra Aerospace for allowing us to contribute to this exciting project.

