Coordinate Metrology Society
Coordinate Metrology Systems Conference 2014
North Charleston, South Carolina | July 21-25, 2014

CMS-2014-021

Automated A380 Fuselage Part Inspection using Industrial Robots and 6DoF Laser Trackers

AUTHORS
Sebastian Schwanzar · Raimund Loser

ORGANIZATION
Premium AEROTEC, Nordenham, Germany; Hexagon Metrology, Switzerland

Published by the Coordinate Metrology Society. Reference number CMS-2014-021.
Copyright remains with the author(s). Redistribution requires permission.

Title: Automated A380 Fuselage Part Inspection using Industrial Robots and 6DoF Laser Trackers

Authors: Sebastian Schwanzar

Contact information:

Sebastian Schwanzar
Premium AEROTEC
Nordenham plant
Bergstr. 4
26954 Nordenham/Germany
sebastian.schwanzar@premium-aerotec.com

Dr. Raimund Loser
Hexagon Metrology
Laser Tracker product line
Moenchmattweg 5
CH-5035 Unterentfelden / Switzerland
Raimund.Loser@HexagonMetrology.com

Technical paper: Yes

Abstract:

With the increased production rates for the Airbus A380, Premium AEROTEC was tasked to establish a new more efficient part inspection cell for pre-assembled fuselage shells. It was determined that no current off the shelf piece of metrology equipment would be able to meet all of the requirements, so a new machine was built from the ground. Multiple disciplines such as a T-Scan, multiple T-Mac frames, a newly developed stereo imaging sensor, off the shelf industrial robotics, and a 6DoF Laser tracker were all integrated through a metrology grade automation SW. Data will be presented that demonstrates the achievable accuracy and speed of this new system as well as a roughly 70% productivity enhancement over the original manual photogrammetric inspection process.