

SITUATION

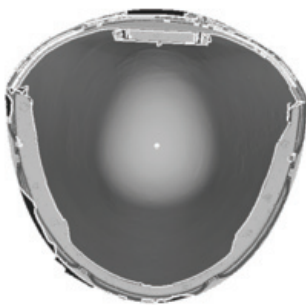
Since its introduction in the 1960s, the MC-130E Talon I has been modified on a nearly continuous basis to incorporate more and more modern technology into its legacy design. One such addition is of a state-of-the-art radar system which would be housed inside a radome that was hand-crafted from fiberglass in the 1950s.

Computer Aided Engineering (CAE) would have to be performed by MI Technologies to test a variety of functions of the radar system inside the radome. In order for MI Technologies to perform CAE, they would need CAD data of the legacy part radome, which has never been modeled before for the MC-130E Talon I. After spending over one million dollars and over a year of time with another company which yielded no results, MI Technologies turned to 3DScanCo to help.



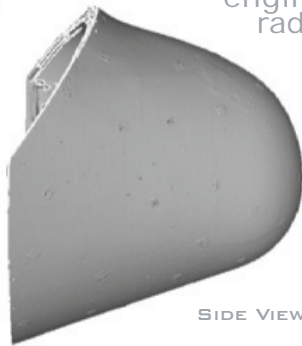
MC-130E TALON I

SOLUTION



INSIDE VIEW

SCAN DATA



SIDE VIEW

3DScanCo was contracted to scan a Fulton and Non-Fulton version of the radome and generate CAD data accurate to .01 inches at specific areas. 3DScanCo used the Konica Minolta Vivid 9i in conjunction with photogrammetry to generate scan data accurate to .002 inches. The high resolution scan data would be used to perform all the reverse engineering processes needed to generate CAD of the radome.

Using the Rapidform software suite, 3DScanCo reverse engineered and modeled the radomes to within the accuracy tolerances. Rapidform allowed for the modeling of the critical surface features, such as the interior surface curvature and bolt hole locations, to be as accurate as possible while remaining curvature-continuous for aerodynamic and electromagnetic testing of the radar system.

RESULTS

The resulting CAD data from 3DScanCo's reverse engineering was hugely successful for CAE performed by MI Technologies. Because CAD data did not exist for these radomes, and because 3DScanCo's CAD models performed so well during testing, MI Technologies is interested in contracting 3DScanCo to scan newer and much larger radomes in the future.






MC-130E TALON I RADOME DATA




Please let everyone at 3DScanCo know we appreciate the effort put forth. ...We will not hesitate to utilize you in the future as opportunities arise.

Dave Smith
 MI Technologies
www.mi-technologies.com

TECHNOLOGY

-  Konica Minolta VIVID 9i
-  Photogrammetry
-  Rapidform

TECHNIQUES

-  3D Scanning
-  Reverse Engineering
-  Datum Alignment

APPLICATIONS

- Aerospace Engineering
- Bolt-Hole Locations
- Computational Fluid Dynamics