

# **Evaluation of Three Dimension Laser Scanning of Aircraft Surfaces for Detecting and Measuring Impact Damage**

**Luis Miguel Miranda and Daniel Paez (Colombia)**

**Key words:** Laser scanning; aircraft; dent

## **SUMMARY**

An important aspect of aircraft engineering and maintenance involves the detection and measurement of damage to the surface of the aircraft. Damage that exceeds a prescribed threshold must be first detected, and then repaired. Currently this involves visual inspection and direct measurements on aircrafts by engineering staff. Today this is a time consuming process that might be improved by three dimensional laser scanning (TDLS). This research utilized a damaged section wing that had been removed from an aircraft for repair to test the capabilities of TDLS in detecting and measuring damages. Data was gathered from a series of distances and angles on a previously identified dent. The data was processed in order to generate a series of models of the wing surface in order to minimize the impact of errors in range measurement while still accurately detecting and measuring the damage location itself. It was found that the proposed identification technics work. Future researches are proposed for detail the error associated with the raw measure and evaluate processing methodologies less time-consuming.