

# Keeping Australian Aircraft

high in the sky

test & measurement

custom electronics  
engineering software  
data management



defence & aerospace

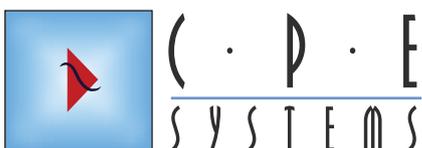
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## Challenge

In order to keep passenger aircraft in operation, a large engine overhaul facility, located in Melbourne, repair, overhaul and refurbish jet and turbo prop engines. This facility specialises in a wide range of Engine & Auxiliary Power Unit types.

As part of routine scheduled maintenance, each engine is periodically tested for both performance and functionality against rigorous industry benchmarks. Traditionally, this is a labour-intensive task where key performance data from each engine is manually collated and calculated from a series of complex equations to generate a final test report and results.

To reduce test times, CPE was approached to automate the testing process. The main requirements for the upgrade were to improve measurement accuracy, test reliability, test repeatability and the presentation of results.



## Solution

By integrating key components from the original system into the upgrade, CPE was able to meet all the key requirements and deliver a solution that was on-time and cost effective.

As the majority of existing sensors were using discrete signal conditioning modules, the outputs from these modules are now routed directly into specifically chosen data acquisition cards mounted inside several PCs. This integration process, reduced wiring and installation costs and allowed for a more accurate examination of time critical signals such as frequency and vibration.

Additionally, where a manually operated throttle previously controlled the engine during testing, now a custom designed software package reads from set tolerances stored in the test configuration file and automatically locks onto the nominated RPM level, similar to the cruise control function in an automobile. This greatly reduces test times, and therefore lowers operating costs, specifically in relation to the use of aviation engine fuel.

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