



CYIENT

PREDICTIVE MAINTENANCE SOLUTIONS FOR AIRCRAFT ENGINES

Improving engine productivity and reducing maintenance costs
for OEMs

Business Challenge

- Reduce operational costs and improve engine longevity, and performance associated with the maintenance of aircraft engines through informed and effective decision-making
- Minimize downtime and production losses by effectively prioritizing maintenance activities and proactively replacing parts prior to failure
- Improve equipment uptime by repairing equipment correctly the first time, minimizing unnecessary maintenance

Analytics Solution

- Designed an ensemble of advanced analytics solutions that could predict when sub-systems of an aircraft engine will fail and align replacements with planned maintenance schedules
- Used machine learning algorithms, which evaluate an engine's exception or repair history and operating or maintenance practices to predict the premature failure risk before preventive and planned maintenance
- Created a predictive model to assess the relative performance of an engine rating—ranging from 100 (new) to 0 (failed) based upon engine risk categories—to help evaluate the estimated remaining life of the engine

Key Business Benefits

Maintenance Effectiveness

- 5-8% reduction in maintenance costs

Productivity Improvement

- 10-15% improvement in engine performance
- 10% improvement in overall engine reliability
- Improved management of engine maintenance schedules and performance through self-service dashboards for executive and operations managers

Value-add for External Stakeholders

- Increased efficiency of fleet scheduling and individual engine maintenance
- New visions from historical pattern detection enables more insight and effective management of parts inventory and sales within the dealer/operations network

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