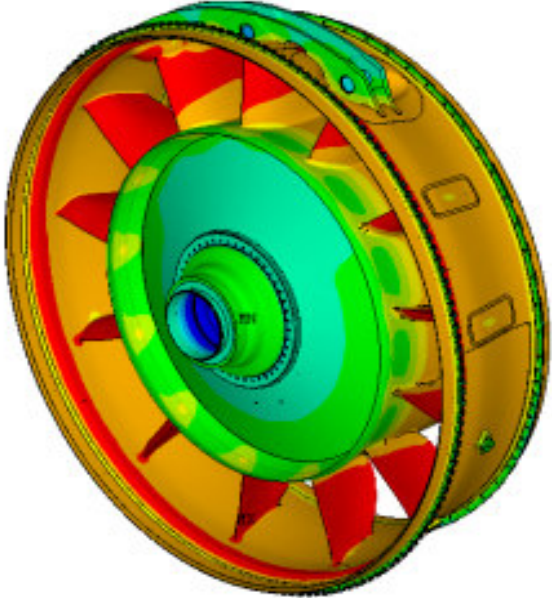


## Commercial Engine Turbine Exhaust Case (TEC) Re - Design for a US based Aero Engine Manufacturer

<p><b>Executive Summary</b></p> <p>GP7000 engine for Airbus A380 is from Engine Alliance – a joint venture of GE Aircraft Engines and Pratt &amp; Whitney. GP7000 TEC is designed and delivered by Pratt. To meet a tight schedule, Infotech was assigned a major part of this design analysis work comprising of Product definition, Structural and Thermal analysis. Infotech’s team worked with the customer’s team to take advantage of the time zone difference and set up a virtual 24 hour design cycle. The design had a number of iterations with Infotech helping in an optimized design and providing all validated analytical models for the all the FAA certification requirements.</p>	<p><b>Engagement Metrics</b></p> <ul style="list-style-type: none"><li>• Contract Value: USD 0.6M</li><li>• Duration: 30,000 person hours over three years</li><li>• Share of work done in India: 85 % of total person hours</li></ul>
<p><b>Client</b></p> <p>Pratt &amp; Whitney , USA</p>	
<p><b>Business Issue(s) Addressed</b></p> <ol style="list-style-type: none"><li>1. Optimization of Turbine exhaust case to achieve weight targets</li><li>2. Re-operation and salvage schemes for manufacturing</li><li>3. Fatigue life calculations and critical FAA certifications expedited using validated thermals provided for all design changes</li><li>4. Provided thermals for critical weight reduction program.</li></ol> 	<p><b>Key Achievements / Deliverables</b></p> <ul style="list-style-type: none"><li>• Reduced time to market</li><li>• Cost Saving</li><li>• Improved life numbers</li><li>• Design validations.</li></ul>

## Commercial Engine Turbine Exhaust Case (TEC) Re - Design for a US based Aero Engine Manufacturer

### How Infotech Helped

1. Developed software tools to automate analysis process in improving productivity and meeting tight schedules.
2. Enhanced customer's Engineering Standard Work to meet tough technical challenges and deliver products with high quality and reliability.
3. Infotech provided all the technical discipline support with P&W mostly in a consulting mode.
4. For the first time a large and very accurate 360 deg TEC model was developed by Infotech and based on these thermals the estimated life increased by 20 % - much to the delight of the program.
5. A series of design improvement suggestions incorporated to reduce the weight of TEC by 50 lbs (~10%) meeting the overall weight target.
6. The lessons learnt on GP7000 TEC are being currently incorporated in PW6000 TEC models.

Tools Used: Ansys, Unigraphics, in-house tools like BCON and FABL.

Methodology Adopted:

- Built thermo-structural model from scratch using another commercial engine as the baseline for initial boundary conditions.
- Used existing ESW and enhanced it's capability with the experience on these models.
- Moved from sector models to 360 deg models for accurate lifing calculations.
- Validated the analytical models with engine data.

### Company Profile

Infotech is the leading integrated offshore engineering outsourcing partner for the manufacturing industry. It provides high quality, cost effective engineering solutions and has deep domain expertise in aerospace, transportation – rail & automotive and industrial machinery segments. Infotech has helped many global engineering companies reduce time to market, optimize resources and reduce costs, thereby creating a measurable and sustainable business impact

Infotech has developed robust cross-border collaborative processes that enable seamless integration with our customers' design teams. Our domain expertise ensures that we are able to undertake complex engineering tasks and effectively deliver high quality results that are critical to our customers' success.

### Contact Information

- USA: Solomon Joseph  
solomonj@infotechsw.com
- India: V. Rajendra  
rajendravr@infotechsw.com
- [www.infotechsw.com](http://www.infotechsw.com)