

# Job Specification

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## Senior Structural Analyst

**Responsible to:** Head of Engineering

**Grade of post:** Senior/Principal

**Salary:** To be agreed

**Hours of work:** 37 hours per week

**Work location:** Oakley, Bedford

### Role Purpose:

Is to drive light-weight and cost-effective optimum solution for the integrated electric power and propulsion system for electric aircraft applications; analyzing static, vibratory and extreme event responses of structural systems including whole engine modelling, rotor dynamics and balancing.

### Key Responsibilities

- Generation of optimum design solutions for the integrated electric power and propulsion system with analytical justifications.
- Generation of component and subsystem level requirements with derivation of appropriate loads in a structural system.
- Perform engine structural system design modelling, rotor dynamics and balancing.
- Carry out structural analysis using hand calculations and Altair Hyperworks suite of tools on which to base product development decisions.
- Perform detailed analysis for light weight design of composite structures (both monolithic and sandwich types).
- Perform structural analysis of composite blades.
- Develop finite element models and carry out strength, buckling, thermal and vibration analysis as appropriate for the design of electric propulsion system.
- Feedback results of analysis into the design team and provide recommendations as part of the concurrent design process.
- Perform multi-disciplinary optimisation studies with Solidworks parametric CAD models and Altair Hyperworks FEA models integrating battery, motor, thermal management system and structural designs with aerodynamics, multi-body dynamics (MBD), flow, noise, vibration and control simulations.
- Derive methods to evaluate mechanical integrity of electric propulsion system.
- Develop test requirements and write test plans and test reports.

- Production of engineering documentation related to stress/multi-physics activities which comply with all strength, vibration, functional and airworthiness requirements.
- Generate flight clearance evidence for prototype trials.
- Ensure the risk with the certification of the product (complying with EASA CS-E and SC-EHPS requirements) is managed effectively during the design and minimised with the use of analytical methods and judgement.

### **Other Duties and Responsibilities**

- To actively participate in Blue Bear's Performance Management Scheme.
- To undertake such other duties and responsibilities as may be reasonably required within the grade and level of the post.
- You will be expected to perform different tasks as necessitated by your evolving role within the company and the overall business objectives of the company. Some travel within the UK may be required.

### **Equality and Diversity**

We are committed to the promotion of equality of opportunity in all of our activities and to encouraging access to our organisation from all groups irrespective of the equality strands. We are working to create an environment in which cultural diversity and individual difference are positively valued in an atmosphere free from harassment and discrimination. We take our legal and moral obligations with respect to equal opportunities seriously and welcome dialogue with individuals on ways in which our equal opportunities policies and practice can be enhanced.

### **Health and Safety**

The organisation together with the assistance of all employees are fully committed to developing a positive safety culture.

We encourage and support employees becoming involved in and participating in health, safety and welfare matters. Our goal is to motivate and empower all employees to work safely and protect their long-term health, not simply to avoid accidents.

