

Job Specification

Modelling and Simulation Engineer

Responsible to:	Head of Modelling and Simulation
Grade:	Senior/Principal depending on experience
Salary:	To be agreed
Hours of work:	37.5 hours per week
Work location:	Oakley, Bedford

Role Purpose:

Deliver aerospace vehicle and system modelling, simulation, dynamics and control support using MATLAB, Simulink, Stateflow and related tools, as part of a small, task-focused team.

Most work relates to unmanned vehicles (UxVs) and associated systems. SC clearance is desirable as most work is defense-related. Customer interaction may be required.

Key Responsibilities:

- Analyse, define, and architect requirements for models of aircraft, their sensors, their systems and the environment.
- Develop, integrate, and verify models.
- Validate models against test data.
- Develop tools in MATLAB object-oriented programming (OOP).
- Conduct trade-off studies, optimize designs, and functional requirements definition and validation.
- Perform time-domain simulations.
- Use knowledge of classical aircraft flight dynamics for frequency-domain analyses.
- Perform control and estimation gain-synthesis.
- Auto-code models to C/C++ and integrate them for MIL/SIL/HIL/PIL testing.
- Ensure design compliance with quality standards.
- Generate technical documentation (e.g., user guides, validation reports).

Other Duties and Responsibilities

- To undertake such other duties and responsibilities as may be reasonably required within the grade and level of the post.
- To actively participate in Blue Bear's Performance Management Scheme.
- 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.

What's in it for you

- Work in a highly motivated SME at the cutting edge of Engineering. See your work rapidly progress to live testing in a matter of months not years.
- Hybrid working available
- Competitive Salary
- Pensions
- Life Cover 5x your salary
- Income Protection Cover
- BUPA Medical and Dental
- Health Cash Plan
- Employee Assistance Programme
- Refer a Friend Reward Scheme

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.

PERSON SPECIFICATION

Education/Qualifications	S/L	I	A
<i>Essential:</i>			
<ul style="list-style-type: none"> • Batchelor's degree in a relevant subject (e.g. Aerospace Engineering, Mechanical Engineering, Electrical Engineering, Engineering Mathematics or Physics) 	X		
<i>Desirable:</i>			
<ul style="list-style-type: none"> • Higher degree (e.g. Masters/PhD) in a relevant subject (e.g. Aerospace Engineering, Mechanical Engineering, Electrical Engineering, Engineering Mathematics or Physics) 	X		
Knowledge and Experience			
<i>Essential:</i>			
<ul style="list-style-type: none"> • Experience in modelling of dynamical multi-physics systems (e.g. Mechanical, Electrical, Aerodynamic, Hydraulic) 	X		
<ul style="list-style-type: none"> • A knowledge and understanding of dynamics, control and estimation theory 	X		
<ul style="list-style-type: none"> • A knowledge of the Systems Engineering lifecycle including: <ul style="list-style-type: none"> ○ Systems design and requirements capture ○ Testing, verification and validation 	X		
<ul style="list-style-type: none"> • MATLAB, Simulink 	X		
<ul style="list-style-type: none"> • Process development and documentation 	X		
<i>Desirable:</i>			
<ul style="list-style-type: none"> • Experience with acausal modelling languages (e.g. Simscape/Modelica) 		X	
<ul style="list-style-type: none"> • Stateflow, Matlab Coder, Simulink Coder, 		X	
<ul style="list-style-type: none"> • Control System Toolbox, Aerospace Toolbox/Blockset, Simscape Multibody 			
<ul style="list-style-type: none"> • Simulink Check, Matlab/Simulink Test, Simulink Requirements 		X	
<ul style="list-style-type: none"> • Experience with DO-178C, DO-331, ED-215 and ED-218 		X	
<ul style="list-style-type: none"> • Experience with autonomous aerial systems 		X	
<ul style="list-style-type: none"> • Knowledge and understanding of aircraft flight dynamics and control 		X	
<ul style="list-style-type: none"> • A knowledge and understanding of theoretical and numerical aerodynamics 		X	
<ul style="list-style-type: none"> • Git Source Code Management 		X	
<ul style="list-style-type: none"> • SIMDIS 3-D Analysis and Display Toolset 		X	
<ul style="list-style-type: none"> • Distributed Simulation Experience (DIS, HLA) 		X	
<ul style="list-style-type: none"> • GUI development 		X	
<ul style="list-style-type: none"> • Military avionics and sensors 		X	
<ul style="list-style-type: none"> • C/C++ 		X	
<ul style="list-style-type: none"> • Other programming languages (C# / Python / Java) 		X	
Personal/Behavioural Attributes			
<i>Essential:</i>			
<ul style="list-style-type: none"> • Cooperative teamwork 		X	
<ul style="list-style-type: none"> • Confident and articulate with good communication skills 		X	
<ul style="list-style-type: none"> • Prepared to travel within the UK and internationally 		X	
Other Requirements			
Subject to security vetting to a minimum SC level and should be prepared to undertake DV clearance	X		

S/L = Short Listing

I= Interview

A=Assessment