

## **Guidance, Navigation and Control for launcher**

**Code:** 20/50

**Company:** Deimos Space UK

**Location:** Remote / Harwell Oxford (depending on office guidelines)

### **Company Description:**

Deimos Space UK was created in 2013 with the goal of delivering high-tech systems and engineering solutions to the UK market for space market. It is located on the Harwell Oxford campus, close to the UK Space Agency, ESA's ECSAT facility, RAL Space, the Satellite Applications Catapult and several other space companies.

The company offers expertise in flight systems, ground segment systems, space situational awareness, satellite navigation, applications and services. The knowledge of satellites, data systems and location-based services puts the company in a unique position when developing satellite applications.

Deimos has a strong GNC/AOCS competence centre with activities covering:

- Satellite formation flying, rendezvous, and active debris removal (ADR)
- Entry, descent, and landing on planets (Earth, Mars) & natural satellites
- Launch vehicles
- Planetary exploration and observation
- Interplanetary Navigation
- Unmanned autonomous vehicles & robotics

### **Project Description:**

Deimos Space UK is selecting one applicant to be integrated with the Flight Systems team to support the development of a new Guidance, Navigation and Control (GNC) for a launcher.

The activities involved may include:

- Design and implementation of GNC algorithms
- Simulator Design, implementation and testing
- Simulation of dynamic systems
- Simulation of stage separation
- Artificial Intelligence and Machine Learning
- Mathematical Modelling
- specification and validation of GNC systems
- Analysis and trade-off of hardware solutions
- Interface with the overall system team

Within Deimos, the applicant will gain valuable experience in the design and analysis of an GNC system. In addition, the applicant will be exposed to the various tasks of a flight systems engineer in the space industry:

- Analytical thinking
- Algorithm design
- SW development & Testing
- Hardware modelling
- Hardware selection and trade-offs

They will have well defined tasks and will be encouraged to plan their work, develop new technical skills and present their findings to the team. In addition, the applicant will have the opportunity to work within an international team of highly skilled flight system engineers. If the work is being done remotely, regular contacts will be maintained via virtual teleconferencing.

**Applicant Specification:**

Deimos is looking for an applicant currently working towards an aerospace degree or similar.

**Minimum Requirements:**

The essential attributes required are:

- a strong background in control and simulation of dynamic systems
- capacity to understand new concepts and apply them to engineering problems
- good communication and team working skills
- Experience in Matlab/Simulink

**Preferred Additional Requirements:**

A solid background in at least two of the following is desired:

- Orbital mechanics
- Classical control techniques
- Multivariable robust control techniques
- Navigation techniques
- Flight operations
- Basic atmospheric flight dynamics
- Simulation of stage separation

**Further details:**

8 weeks minimum fixed term contract to be agreed with successful candidate. Virtual Induction Event to be held on 15 July 2020. Ideally to complete before the start of the next academic year. Salary is £1,500 per calendar month gross.

**Closing Date for Applications: 5pm Monday 13 July**



Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.