Project 18/36: Development of a space-borne GNSS receiver subsystem using COTS

Company: Open Cosmos

Supervisor: Marcin Pol

Location: Harwell Campus, UK

Company Description: Open Cosmos is revolutionising the way space technology is used by providing turn-key solutions for space mission deployment in Earth observation, telecommunications, in-orbit demonstration, science, etc.Driven by the vision of making space accessible to anyone, we provide simple and affordable access to space using nanosatellite technology. We went from design to delivery of our first nanosatellite QB01 in only four months, followed by a launch and deployment in LEO early April 2017.The company is currently developing the next generation of satellites and end-to-end services for private and institutional customers to be launched in 2018. Based in the Harwell-Oxford Campus in the UK, we are a young and ambitious team with experience in the aerospace, electronics and software industries. To support our growth and make our vision a reality we are looking for the brightest minds and the best talents in every domains.

Project Description: The successful candidate will be involved in development of a space-borne GNSS receiver subsystem using commercial of-the-shelf (COTS) receiver module. The work will cover both design of a PCB layout with a commercial of-the-shelf receiver module and implementation of a dedicated embedded software. The key tasks will include undertaking requirements capture, performance trades, design and testing activities. This position will allow the intern to learn and understand high level engineering process and methodology as the one applicable in the space sector.
The applicant will:
- Design schematics and PCB with the components required to successfully interact with the COTS GNSS receiver module.
- Develop the embedded software for the GNSS receiver subsystem.
- Test and characterisation of the assembled module in the lab with particular attention to GNSS receiver performance at different altitudes, GNSS constellation configuration, spacecraft velocity etc. in order to assess the suitability of the COTS module for usage in space.

Applicant Specification:
- Practical skills of electronic hardware development (schematics capture, layout design, manufacturing process and testing)
- Theoretical knowledge and practical skills of embedded-oriented software development
- Knowledge and software development skills with C and C++
- Knowledge of software assisted approach for laboratory testing equipment
- Ability to work across a broad spread of technical and project domains
- Ability to modelling and prototype systems and algorithm development for technology evaluation
- Strong, creative problem-solving skills

- Good collaboration and communication skills

Minimum Requirements:
- Studying Bachelor's or Master's degree in science, engineering or maths subject
- Theoretical and practical understanding of RF signal acquisition and processing

Preferred Additional Requirements:
- Knowledge of GNSS technology (Galileo, GPS, GLONASS)

Further details:
8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 18 June 2018, when the SPIN Induction Day will be held at the Satellite Applications Catapult, Harwell. Salary is ~£1,400 per calendar month.

Closing Date for Applications: 12 noon, 5th June 2018
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.

Apply here: https://sa.catapult.org.uk/people/space-placements-industry-spin/