LEO Orbit prediction stability and forecasting

Company: Lacuna Space Ltd

Location: Harwell (but the project can be completed remotely with occasional visits to Harwell)

Code: 18/57

Company Description:

Lacuna Space is providing data collection from EO 'ground-truth sensors' located in remote locations in the world and used for the cross calibration of EO data sets. Lacuna's first satellite is awaiting launch and will be followed by three other satellites in 2019.

Project Description:

The project involves developing algorithms to determine the LEO satellite orbit parameters from GNSS measurement data, analyse orbit prediction stability and error over time, and to optimise the synchronisation of the ground device schedules between satellite passes and the data collected from EO ground-truth sensors. The algorithms will need to be sufficiently compact and efficient that it can function within the satellites' on-board flight controller.

Applicant Specification:

The ideal applicant would be working at PhD / MSc level on a related research field, and be comfortable working as part of the geographically distributed team, using collaboration tools such as Slack / Skype to regularly exchange ideas and report progress. Lacuna Space is a fast moving start-up and the applicant will be expected to make a significant contribution, with the output from the project being actively used in space within six months.

Minimum Requirements:

The applicant should have a good understanding of orbit mechanics, especially as related to LEO satellites. Hands-on experience with orbit simulation tools such as GMAT or STK is essential, along with knowledge of analysis and visualisation tools such as R and Matlab (or equivalents).

Preferred Additional Requirements:

Ideally the candidate would currently be working in a related research field such as LEO orbit propagation / simulation, GNSS prediction, etc.

Further details:

Eight weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date to be mutually agreed in early December 2018. Salary is £3,000 for the eight week assignment (which maybe spread over a longer period of time provided it is completed prior to the end of February 2019).

Closing Date for Applications: 5pm on the 28th November, 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.