

# IGOSat Project

## Intership Proposal - Fall 2018 Flight Software Engineer for IGOSat

**Skills, Keywords** : embedded software, space engineering, real time operating system, freertos, operations, C programmig langage, debugging, software engineering, system programming, software testing.

**Level Wanted** : 4th year, master degree, programming experience **Duration** : 4 to 6 months **Stipend** : > 500 € / mois

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### Project Description :

The Laboratory of Excellence (LabEx) UnivEarthS, set up by laboratories AIM (Astrophysique et Interactions Multi-Echelles), APC (AstroParticule et Cosmologie) and IPGP (Institut de Physique du Globe de Paris) from Paris Diderot University, is carrying carrying transverse projects between those 3 laboratories.

Using the strong involment of those laboratories in numerous space experiments and instrumentation, an educational nanosatellite project has begun in 2013, with the financial and technical support from CNES (Centre National d'Etudes Spatiales) and the Space Campus of Paris Diderot University.

More specifically, the project is to develop a scientific 3U CubeSat, and launch it in 2019. The satellite will carry 2 payloads, one to study the Ionosphere and one to study the radiation belt.

### Internship Description :

The purpose of the internship is to work on the integration of the different flight software parts that are being developed, into a single software to be embedded in the satellite.

Several parts of the main flight software are currently being developed and tested, as well as the payloads software and the Attitude Control Software. Several functional tests have to be done after integration on the On-board Computer.

It is good to note that we use several tools to produce software and sometimes generate programs, i.e. Matlab / Simulink. Therefore feeling comfortable with new tools quickly is a real plus !

Within a team of students, engineers and scientists, the student need to be able to work autonomously as well as part of a team, have a sense of rigor especially in writing presentation, and already a global vision of information transmission.

This internship is a good opportunity to address numerous points of space engineering.

**Website:** <http://www.igosat.fr>

**reference:** André Emile Heunis (2014), Design and Implementation of Generic Flight Software for a Cubsat, Nikitas Chronas (2016), Master Thesis of the Onboard Computer Software and command  
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control satellite software (UPSat).