CSUM | CENTRE SPATIAL DE L'UNIVERSITÉ DE MONTPELLIER

FONDATION VANALLEN UNIVERSITÉ DE MONTPELLIER

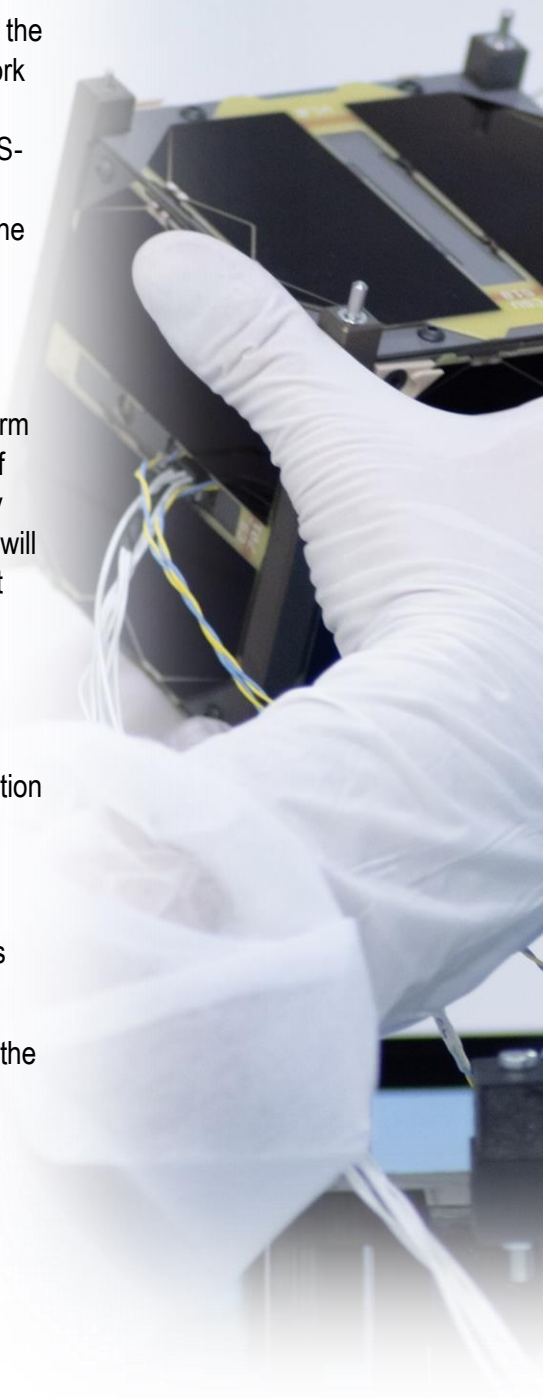
Internship offer
Embedded software developer/engineer for 12U Platform

cometes

FRANCE 2030

Context

The University Space Center of Montpellier (CSUM) is the French leader in the development and operation of nanosatellites developed by students. It has acquired in-depth competences in the field of design, manufacturing, testing and operation of nanosatellites and their subsystems, as well as in the area of space project management and product assurance in the framework of university space projects. The CSUM has an AIT (Assembly Integration and Test) Facility, a CDF (Concurrent Design Facility) and both UHF and S-band Ground Stations. The CSUM develops its own 1U to 12U CubeSat nanosatellite platforms with the support of the Van Allen Foundation and the French and European space agencies.



Internship description

Objectives: CSUM is developing and currently in phase B of a 12U platform designed to accommodate complex payloads from our partners. A team of interns will contribute to finalizing the preliminary design of the platform by capitalizing on the lessons learned from CSUM's numerous missions and will support the development of subsystems up to the implementation of a first functional model called FlatSat.

This offer focus on the embedded software. The 12U platform is made of several sub-systems, including:

- The AOCS: the sub-system responsible for the attitude determination and control
- The EPS: the power generator and the power distributor
- The controller of mission and the telecommunications subsystems

Starting from its counterpart of the 3U platform, the in-orbit feedback of Robusta 3A, the requirement of the CSUM team, your job will be to adapt the application layer of one of them, for the 12U platform.

Main activities related to your mission:

- Define software specifications for the application layer of the sub-system, from the requirements gathered from the CSUM team and the past projects feedback.
- Analyze the specifications to design the software.
- Develop and test the software from the design.
- Write the documentation of the software.

Level: From Bac+1 up to Bac+5 in electronics, embedded systems, or similar. The mission's activities can vary depending on the level of the intern.

Duration: 4 to 6 months

Skills (it is not mandatory to have all of them)

- First experience (pro, scholar, or personal project) with C
- Knowledge in embedded software development
- Understanding someone else's code
- Knowledge in networks (principles, packets, sockets, ports, …)
- Skills on Linux (bash, serial debugging, ...)
- Experience with GIT or similar version control system
- Basic skills in Python (writing small Python scripts for tooling, testing or debugging)
- English – minimum: being able to have a technical discussion with experts and to write documentation
- Ability to produce clear technical reports and presentations
- Critical thinking, autonomy, curiosity and a desire to learn

Location: Centre Spatial Universitaire de Montpellier, Campus Saint-Priest, Montpellier, France.

Stipend: 4.35 euros/worked hours for duration between 308 and 924 hours, 35 hours/week.

Preferred starting date: March 2027

Supervisor: Amaury KNOCKAERT – Software team leader - amaury.knockaert@umontpellier.fr

How to Apply?

Send your application to amaury.knockaert@umontpellier.fr