CSUM | CENTRE SPATIAL DE L'UNIVERSITÉ DE MONTPELLIER

FONDATION VANALLEN UNIVERSITÉ DE MONTPELLIER

Internship offer

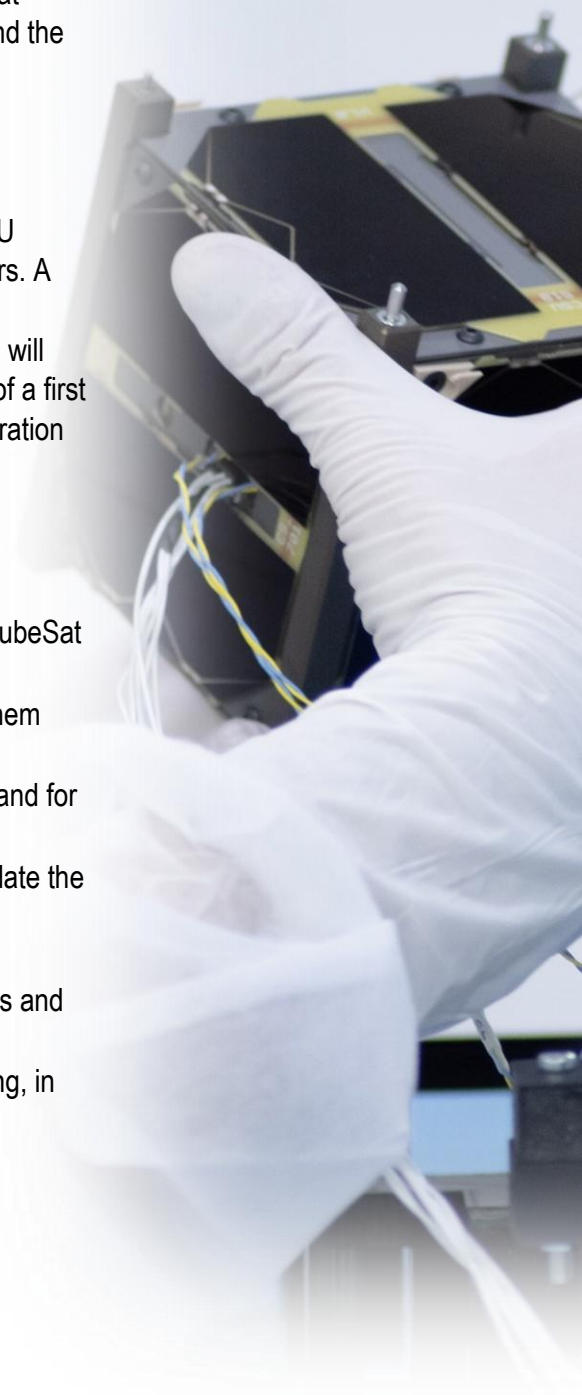
cometes

FRANCE 2030

Hardware Integration and Testing

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 currently in Phase B of the development of a 12U platform designed to accommodate complex payloads from our partners. A team of interns will help finalize the preliminary design of the platform, building on the lessons learned from CSUM's numerous missions, and will support the development of the subsystems up to the implementation of a first functional model: the FlatSat. This offer focuses on the hardware integration and testing of the 12U CubeSat FlatSat.

Main activities related to your mission:

- Based on the feedback from ROBUSTA-3A, CSUM's first 3U CubeSat define the integration and test strategy for the 12U CubeSat flatsat.
- Take over the subsystem PCBs already designed and verify them individually (power-up, functional and interface tests).
- Write the test and integration procedures for each subsystem and for the complete flatsat.
- Integrate the subsystems step by step into the flatsat and validate the interfaces between them (power, data buses, connectors).
- Support the integration of the flatsat with the test bench.
- Improve the test bench: add new functionalities, automate tests and improve data acquisition.
- Identify, document and follow up anomalies found during testing, in collaboration with the subsystem designers.
- Write the test reports and keep the flatsat configuration documentation up to date.

- Present the work in the project design reviews.

Level: 2nd year of Master Degree or equivalent.

Duration: 4 to 6 months

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

- Knowledge of electronics and ability to debug hardware at board level.
- Experience using measurement equipment, such as oscilloscopes, multimeters, SMUs, power supplies and logic analyzers.
- Knowledge of communication buses and protocols (I2C, SPI, UART, CAN or similar).
- Programming skills for test automation (Python, Matlab or similar).
- Experience using a version control system (Git or similar).
- Rigor and method in writing test procedures and following them.
- English – minimum: able to hold a technical discussion with experts and write documentation.
- Ability to produce clear technical reports and presentations.

Location : Centre Spatial de l'Université de Montpellier, Campus Saint-Priest, Montpellier, France.

Stipend: 4.50 euros/worked hours for duration between 308 and 924 hours, 35 hours/week.

Preferred starting date: March 2027

Supervisor: Sara VEGA MARTINEZ, sara.vega-martinez@umontpellier.fr

How to Apply?: https://csum.umontpellier.fr/emplois-stages/

(Use the form to submit your CV and cover letter)