CSUM | CENTRE SPATIAL DE L'UNIVERSITÉ DE MONTPELLIER

FONDATION VANALLEN UNIVERSITÉ DE MONTPELLIER

Internship offer

Hardware Engineering for BMS

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 focuses on the Battery Management System (BMS) development.

Main activities related to your mission:

- Based in the ROBUSTA-3A feedback, CSUM's first 3U CubeSat,
- define the hardware requirements for the BMS 12-U CubeSat
- nanosatellite.
- Search for BMS component solutions for 3S-2p battery configurations
- that ensure robust space performance.
- Design the BMS hardware for integrate in the EPS subsystem.
- Test the hardware on the battery simulator and the real battery to
- take all hardware characteristics.
- Write the test and the interface document.
- Integrate in the EPS 12U and the flatsat.

Level: 2nd year of Master Degree or equivalent.

Duration: 4 to 6 months

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

- Proficiency PCB design software tools (Altium, Kicad or similar).
- Experience using measurement equipment, such as spectrum analyzers,
- smu, and oscilloscopes
- Experience using version control system (GIT or similar)
- English – minimum: being able to have a technical discussion with
- experts and to write documentation
- Ability to produce clear technical reports and presentations

Location : Centre Spatial Universitaire 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)