

3U-CubeSat attitude control test bench

Internship offer

University Space Center of Montpellier (CSUM)

The University Space Center of Montpellier 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 and 3U CubeSat nanosatellite platforms with the support of the Van Allen Foundation and both the French and the European space agencies.

Internship description

The ADCS subsystem is in charge of the control of the attitude (orientation) of the satellite.

In order to test the control algorithms implemented on the on-board computer, a test bench has to be developed. This test bench consists of a simulated environment (Matlab/Simulink) that simulates actuators and sensors while the on-board computer runs ADCS algorithms as if it was controlling real actuators and getting data from real sensors.

The main objective of this internship is to finish the development of this test bench. The student will have to link relevant Simulink inputs and outputs to the "real world" via input/output interface boards and make sure that the on-board computer communicates properly with the Simulink models.



Figure 1: ADCS "Hardware in the loop" test bench

Skills/Knowledge: Simulink, Communication buses (I²C, SPI, CAN), FreeRTOS
Level: 1st/2nd year of MSc or equivalent
Languages: English – being able to have a technical discussion with experts

Duration: 2 to 4 months
Preferred starting date: Position open immediately
This internship is remunerated.

Location: Centre Spatial Universitaire de Montpellier, Campus Saint-Priest, Montpellier France
Supervisor, Function at CSUM: Benoît Heintz, ADCS engineer

Contact

Please upload your application at: <http://csu.edu.umontpellier.fr/en/job-offers-internship/>