

INTERNSHIP OFFER

Testbench for satellite communication system

1 UNIVERSITY SPACE CENTER OF MONTPELLIER

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 and 3U CubeSat nanosatellite platforms with the support of the Van Allen Foundation and both the French and the European space agencies.

2 INTERNSHIP DESCRIPTION

Description of the tasks: CSUM is developing its new generation of Telemetry, Tracking and Control Subsystem (TT&C). During this development process, the team will have to continuously perform tests on the subsystem. The goal of this internship is to specify and design a complete testbench to validate every technical increment performed on the TT&C. At the end of this internship, CSUM will have a setup to plug in the TT&C and perform all the validation procedures automatically at every new commit on the TT&C repository.

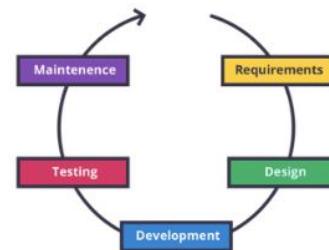


Figure 1: Development and Validation procedure.

With that goal, the intern will be involved in the process of specifying and selecting the components for the testbench, setting up the hardware to communicate with the TT&C and test it, installing and configuring the software tools to perform these tests. During this project, you will be in contact with the following technologies/topics:

- Python programming language;
- Linux Operating System;
- Radio Frequency in the UHF band;
- Software Defined Radio technologies and tools (ex: Gnuradio);
- Communications systems for space applications;
- Raspberry PI setup and configuration;
- GIT and Continuous Integration tools
- Different test frameworks

Skills/Languages: General Knowledge of any programming language (C, C++, Python, etc...)

Plus (not required):

- Communications Systems
- RF Systems
- Linux
- GIT and Continuous Integration tools

Location: Montpellier - France

File name: CSUM-M-RH-PROP_TTC_testbench_v1.0.0
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Preferred starting date: 08/03/2021 (flexible)

Duration: 6 months

Supervisor, Function at CSUM: Rafael DUARTE - Ground to Space Division Manager

THIS INTERNSHIP IS REMUNERATED.

3 CONTACT

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