

INTERNSHIP OFFER

Qt GUI application development for radio transceivers testing

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

The CSUM is using a COTS radio transceiver chip for the telecommunications between the 1U and 3U satellites and the ground segment. The CSUM is looking for an intern in charge of the design of a Qt GUI application on Linux that communicates with the transceiver. The aim of this application is to: set the chip's configuration on the go, monitor and analyze its behavior in real-time during RF tests on ground.

The tasks are the following:

- To propose a design for this application, given the specifications.
- To organize the project's folder and find a way to clearly organize the source files, modules and libraries.
- To develop the GUI application.
- To test the application.
- To write user manual and technical doc.



Mandatory skills:

- Basic skills of C++ including pointers, dynamic allocation and object-oriented programming.
- English level B1

Additional skills:

- Advanced skills of C++: inheritance, polymorphism
- A first experience with Qt
- Low-level programming with microcontrollers
- A first experience with Git
- Basic skills with Ubuntu

Level: Bac +1 up to Bac +4 in programming, embedded systems or equivalent.

Preferred starting date: March - April 2022

Duration: 2-6 months

Supervisor: KNOCKAERT Amaury, Embedded Systems engineer.

Location of the internship: CSUM, University of Montpellier, France

Stipend: 3.90 euros/worked hours for duration between 308 and 924 hours, 35 hours/week.

3 CONTACT

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