INTERNSHIP OFFER

Title: Development of a message exchange system for HAM Radio community

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: As part of CSUM's activities in partnership with the amateur radio community, we are implementing a messaging exchange system that will be executed on board our next satellite missions. This messaging system will be installed on the Telemetry, Tracking and Control Subsystem (TT&C) and will be responsible for receiving and sending messages between HAM Stations around the world. The goal of this internship is to develop the source code that will implement this messaging system. The intern will be in direct contact with members of the HAM Radio community to get their feedback about the implementation. This project will be open-source.
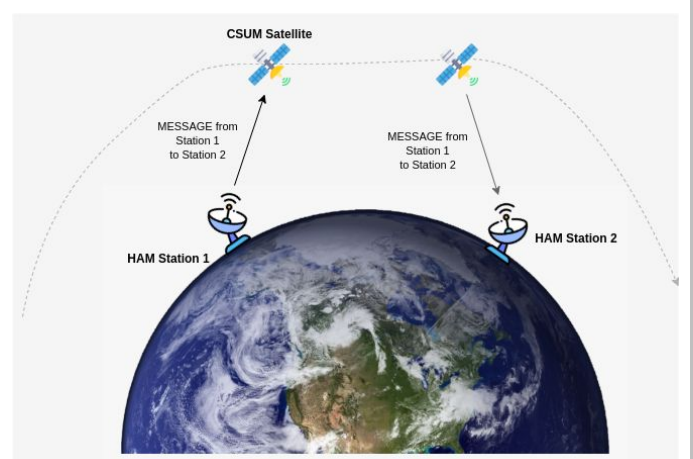

Figure 1: Message exchange system to be implemented onboard CSUM's upcoming missions.

During this project, you will be in contact with the following technologies/topics:
- C Programming Language;
- FreeRTOS and its data exchange mechanisms;
- Embedded software development and related tools;
- Unit Tests (Unity);
- Communications systems for space applications;
- GIT and Continuous Integration tools

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

Plus (not required):

- Communications Systems

- RF Systems

- GIT and Continuous Integration tools

Location: Montpellier - France

Preferred starting date: 08/03/2021 (flexible)

Duration: 3 to 6 months

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

THIS IS A REMUNERATED INTERNSHIP.

3 CONTACT

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