INTERNSHIP OFFER

Title: Development of a Ship Based Radio Terminal for Space Applications

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: One of the goals of the upcoming Robusta 3A mission is to relay data between ships in the Mediterranean Sea and a Ground Station located in Montpellier. This data will then be used to predict weather events such as "Épisodes Cévenol". Onboard the ships, a radio terminal will have to be built and installed to collect and send the data to the satellite platform via radio link. In this internship, the intern will be directly involved in the design and implementation of this Ship Based Terminal.
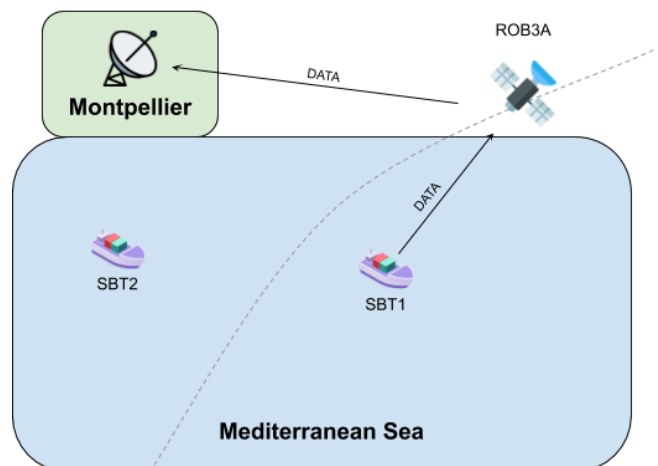

Figure 1: The SatNogs ground station network.

During this project, you will be in contact with the following technologies/topics:

- Python programming language;

- Linux Operating System;

- Raspberry PI setup and configuration;

- Radio Frequency in the UHF band;

- Software Defined Radio technologies and tools (ex: Gnuradio);

- Communications systems for space applications;

- Architect, design and implementation of RF systems operating in UHF frequency bands.

- Conception and definition of test procedures, test plans and test strategies in alignment with design.

- Provide design feedback according to testing results.

- Provide support to the satellite operations and design team.

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

> **Plus (not required):**
>
> > **-** Communications Systems
> >
> > - RF Systems
> >
> > - Linux

Location: Montpellier - France

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/