

File name : ROBUSTA3A Mission Simulation
Version : 1.0
Date : 16/04/2019
Contact : xavier.laurand@umontpellier.fr



ROBUSTA 3A MISSION SIMULATION

Background

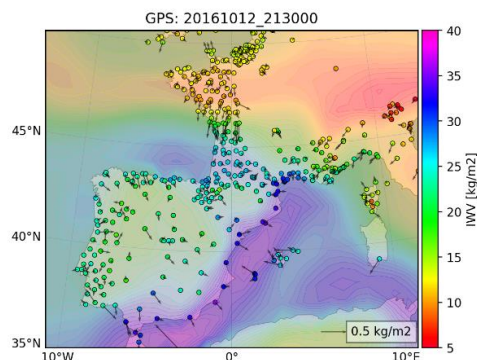
The mission objective of ROBUSTA-3A Méditerranée is to demonstrate the ability of a 3U CubeSat based system to collect meteorological data onboard a ship located in the western Mediterranean Sea (between France, Spain, Italy and North Africa) and rapidly transfer this data to partners for storm forecasting. There is also a scientific collaboration with ENSTA, IGN and MétéoFrance to improve modelling of atmospheric water content as part of weather and climate knowledge.

The CubeSat and the scientific equipment on the ships are developed by students at the University Space Center of Montpellier. In 2020 the data will be collected in the Mediterranean Sea, sent to Montpellier in quasi real-time and then be processed by ENSTA Bretagne and IGN in France.

One need to simulate the data flow, how they would be acquired, packaged, send.... This will be used to verify the concept of operation and test the software and processing done by ENSTA.

Internship Objectives

- Perform a small bibliographic research CubeSat
- Create a tool to predict ships trajectory based on available data: schedule, AIS data, ship information...
- Interface with existing mission analysis/tools of the ROBUSTA-3A mission in order to assess contact time and data download.
- Based on data recorded in 2012 and tools developed, simulate 1 month of ROBUSTA-3A mission, produce data flow that will be similar to the one collected by ROBUSTA-3A system in real time. Make these files available to ENSTA for processing and testing in there system.
- Give recommendation of mission operation concept and operational procedure



Internship Condition

- Open to MSc students
- Written and spoken English is a plus
- The internship will be of 4 to 6 months
 - For 6 months internship other task may be added
- The internship will take place in Montpellier
- A report shall be written to document the work

