**Internship: RF Signal Localization**

**Overview:**

Beyond Gravity (formerly RUAG Space), headquartered in Zurich, Switzerland, is the first space company to combine a startup mindset, agility, speed and innovation with decades of experience and proven quality. Approximately 1600 employees at 12 locations in seven countries (Switzerland, Sweden, Austria, Germany, Portugal, USA and Finland) develop and manufacture products for satellites and launch vehicles. 🡪 More information at: www.beyondgravity.com

Beyond Gravity is developing an instrument (payload) for detecting Radio Frequency (RF) signal emissions in a defined frequency range, and determine the glocalization of the emitter. A key element of the geolocation function is the signal processing that includes various algorithms (coordinate transformation, statistical estimators, correlation and complex matrix processing).

**Objectives:**

The objective of the internship is to develop a methodology for the glocalization, implement the selected approach on test hardware and perform some test trials with a ground based demonstrator.

**Workflow and Deliverables:**

The workflow is as follows

* Study of the existing documentation and Phyton code and suggestions for improvements
* Market survey of existing Hardware (HW): antennas, amplifiers and Software Defined Radio (SDR)
* Selection of hardware and purchase of the selected equipment
* Coding in Phyton of all routines needed for glocalization
* Tests of the demonstrator system
* Report containing
  + Documentation of the system and the code
  + Analysis of the test results
  + Recommendation for the next steps

**Required Skills:**

For the good realization of the project, it is recommended that the student have:

* Understanding of signal processing
* Understanding of RF theory.
* Good mathematical background
* Experience in coding in Python or C++
* Hands on experience of working with hardware

**Place of Work:**

The student will have the opportunity to work in a stimulating environment with other students at the brand new Beyond Gravity offices at the Zürich Airport Circle.

**Contact**:

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