Internship tutor:
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Internship with **ISAE SUPAERO** – Toulouse
Location: ISAE-SUPAERO
Grant: standard ISAE rates, approx. 600 euros/months

Development of a piloting/guiding system for self-guided parachute drone

Context:

As part of a collaborative research project with the DGA-TA on the piloting/guidance of airborne systems, we are developing a reduced demonstrator (drone) of self-guided parachute, airdropped, and piloted under wing-type parachute (example photo attached).

Objectives of internship:

The specific objectives of the internship are the specification, the development, and the evaluation of the processing performances of the embedded system of control, including the hardware, and low layer software, that will have to run the algorithms of control of the self-guided parcel.

The first step is to specify the requirements in terms of platform / computer, actuator and sensors.

Then to set up a system based on "Raspberry Pi" or "Beaglebone" to test the real time capacity and the performances of this type of card for the envisaged algorithms of trajectory planning.

The design (under CAD) and physical integration of the system with the actuators, sensors and batteries, in a box taking into account the mechanical interfaces with the parachute and the payload is part of the work expected during this internship.

Profile:
The expected profile is an Engineer / Master 2 in end of study, with specialization in robotics / mechatronics / embedded systems having also good notions in flight mechanics and in automation systems, and at ease in Linux/ROS/Python/C++ programming

Duration: 6 months from March 2022

REQUIRED SKILLS

Skills: Embedded system, Python/C++/Linus, CAO

Soft skills : Autonomy, reporting & scheduling, curiosity, knowledge in flight principle and in robotics