



Design and implementation of an attitude determination and control system (ADCS)

We are looking for two motivated electronic master students.

Project description

The Aether Student CubeSat team brings together young Belgian engineers who are passionate about space technology. We are designing a CubeSat: a nano-satellite small enough to hold in your hand. In the past decade, the CubeSat standard has enabled countless new innovations in the space industry, and we are determined to uphold this tradition!

Aether is focusing on the area of re-entry: creating the technology that will allow future CubeSats to safely re-enter the atmosphere and land on Earth after carrying out their experiments in orbit. This will allow scientists to analyze samples and get even more results out of their experiments, and all this with the affordability and accessibility that come with the CubeSat platform!

Thesis description

In orbit and in preparation of the CubeSats re-entry, it is essential that the satellite is aimed at the desired direction. In order to do so, an Attitude Determination and Control System (ADCS) is required. As the name suggests, this system determines the attitude of the spacecraft and corrects it if needed by using an on-board actuator. A wide range of sensors and actuators exist. Because of the strict size, weight and power restrictions of the CubeSat, a careful selection and design of the ADCS is required.

Thesis objective

The goal of this thesis is to design the ADCS for Aether's re-entry CubeSat. First, an overview of all the applicable sensors and actuators will be made. Secondly, the most suitable components will be selected and a control algorithm using these components will be designed.

Profile

- Good basics of electronics and mechanics
- Basics in control systems

What do you gain?

- A unique engineering experience within an exciting space mission.
- Create added value for your CV and the team.
- A team of students willing to help in any way possible.
- Be part of the team that will revolutionize the CubeSat platform.
- Connection to a wide network of aerospace companies

If you are interested? Please contact us at recruitment@aetherspace.be .
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