

Electrical Power System development for a CubeSat mission



We are looking for two motivated 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 :

A crucial part of any satellite mission is power management, performed by the Electric Power System (EPS). Generally, solar power is used. Typically, there is a cycle defined by the satellite's orbit, with moments of direct sun exposure alternated with moments in the Earth's shadow. The satellite energy budget and consumption (by satellite subsystems and payloads) must be carefully managed over these cycles..

Thesis objective :

This thesis involves designing this subsystem. Questions raised are: what type of batteries will be used? What is their size? How will power be delivered to the different subsystems? During this thesis, you will work together with the Aether student team. Many of the features that serve as input to this thesis (such as satellite orbit, power consumption by the satellite) will be developed in parallel to the thesis by the student team, requiring close collaboration.

Profile :

- Analog electronics and design
- Systems theory and signal processing
- Electronic design and interfacing
- Energy conversion
- Aeronautical engineering technology

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.

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

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