Design of CubeSat black box to withstand satellite re-entry

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 :

During the re-entry, the satellite is exposed to very high temperatures, and uses a Thermal Protection System (TPS) to prevent it from burning up. Inside the satellite, several crucial components need to be protected further from the heat. These include the experimental payload, the onboard computer, batteries, and communication system.

Thesis objective :

This thesis involves the design and simulation of a 'survival unit', or 'black box' that encloses these subsystems and keeps their temperature at a minimum. You will work together with the Aether student team.

Profile :

- Analog electronics and design
- Digital electronics and design
- Computer technique, microcontrollers, operating systems
- System theory and signal processing
- Electronic design and interfacing
- Aeronautical engineering technology
- Mechanical design including the material selection

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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