Investigation of potential application of a digital twin for a re-entry CubeSat to improve the performance and reliability.

We are looking for two motivated Electromechanics, Electronics-ICT 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

The Master's thesis will focus on investigating potential applications of a digital twin for a re-entry CubeSat to improve the performance and reliability of the spacecraft. The analysis will involve exploring different use cases for the digital twin, such as mission planning, system testing, and anomaly detection. The student will also develop strategies for using the digital twin to improve the CubeSat's performance and reliability, such as generating simulated data to train a machine learning model.

Thesis objective

The objective of this Master's thesis is to investigate potential applications of a digital twin for a re-entry CubeSat and develop strategies for using the digital twin to improve the spacecraft's performance and reliability. The study aims to provide valuable insights into the use of digital twin technology in spacecraft design and contribute to the development of advanced CubeSats with enhanced performance and reliability.

Profile

- Aerodynamics
- ANSYS, MATLAB, python, …
- Experience with / interest in digital twins
- Experience with / interest in machine learning

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 .
Andreas Vesaliusstraat 13, 3000 Leuven, Belgium
www.aetherspace.be