

Numerical Analysis of the QuadSAT UAS

Keywords: Unmanned Aerial Systems (UAS), Antennas, Electromagnetic Scattering

Context: To optimize the performance of UAS-based antenna measurements, a characterization of the UAS payload's electromagnetic properties is often required to minimize any undesired electromagnetic scattering between the UAS platform and the probe antenna. QuadSAT payloads integrate broadband antennas with a relatively high gain. However, due to the nature of the UAS-based measurements, the probe antenna is mounted within a gimbal system, where rotation is introduced for alignment with respect to the Antenna Under Test (AUT). Therefore, the probe antenna will be positioned at different points with respect to other UAS components, e.g., RF and mechanical elements. The probe rotation may lead to reflections and coupling, which results in changes in the radiation pattern.

Objectives: This project's main goal is to help with the numerical modeling of new QuadSAT payloads. The main activities will include numerical analysis of the probe antenna (dual-polarized horn antenna), investigation of radiation pattern changes due to antenna mounting effects, rotation, and other payload elements, and experimental validations.

Expected Profile: The candidate must have a degree in Electrical Engineering or related fields, with a solid background in electromagnetism, theory, design, and experimental evaluation of antenna systems. The candidate is also expected to have good knowledge of electromagnetic design software, MATLAB, and be fluent in English.

Research Environment: At Quadsat, you will join a diverse team of innovative colleagues who are impacting the future by changing the game of antenna testing. We have the freedom to make decisions - and the room to innovate, meaning you can make a big impact with your work. As we continue to experience high growth, there are ample opportunities for career advancement and skill development as the company expands.

In the R&D department, you will join a team of driven and innovative engineers with specialties in robotics, software, and RF. Our passionate team of dedicated engineers is looking to drive innovation in the antenna test and measurement industry.

Duration: 4 months

Starting date: As soon as possible.

Location: Odense N, Denmark.

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