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ORBIT NTNU'S BIOSAT: BRIDGING EDUCATION AND SPACE EXPLORATION

Abstract

The BioSat mission, driven by the student team Orbit NTNU, has progressed to Phase C, beginning on the path toward the Critical Design Review (CDR). This paper intends to elaborate on this journey, spotlighting the engineering and organizational challenges encountered in optimizing the life-support system for a plant in a 3U satellite. As a secondary payload, BioSat aims to measure noise levels in the amateur frequency band to map noise levels with a non-space grade software-defined radio, making it easier to utilize in the future.

The BioSat project represents the educational spirit of student-led space missions, offering a real-world platform for interdisciplinary collaboration, problem-solving, and innovation. As we navigate through Phase C, the experiences and preliminary outcomes not only complement the academic journey of the team members but also promise to contribute valuable insights to the fields of space biology and communications, promoting a better understanding of life-support systems in microgravity environments and the mapping of noise levels in space.