

IAF SPACE OPERATIONS SYMPOSIUM (B6)
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SMALL SATELLITES SYSTEM OVERVIEW SIMULATOR: DESIGN AND EVALUATION

Abstract

With the rise in popularity of CubeSats, simulators are holding an important role in designing systems and sharing knowledge. Hence, creating an online platform for teaching learners the basic design of small satellites and ways to verify the mechanisms experimentally, can motivate self-learners to enter the field of space studies. In this paper, we are introducing a platform, where anyone can study the design process of satellites. The simulator would provide independent circuit board models holding a selection of essential components, and the configuration of the necessary subsystems required for designing CubeSats (e.g. Power, Communication, Control and Data Handling). The platform would also provide knowledge regarding other software that can be utilized to verify the functionalities, perform structural analysis and predict the behavior of the systems. In addition, the paper contains the designing process of the simulator and the effectiveness of the system in teaching students the basics of satellite systems.