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Author: Ms. Valeria Dittel Tortós
Orbital Space Technologies, Costa Rica

Mr. Mauricio Rodriguez
Orbital Space Technologies, Costa Rica
Mr. Carlos Rodríguez
Orbital Space Technologies, Costa Rica
Ms. María del Barco
Costa Rica Institute of Technology (ITCR), Costa Rica
Ms. Sofia Ramirez Arana
Instituto Tecnológico de Costa Rica (TEC), Costa Rica

CHALLENGES AND OPPORTUNITIES OF A COSTA RICAN MICROGRAVITY STARTUP DURING THE MANAGEMENT OF THE FIRST SUBORBITAL FLIGHT BY ORBITAL SPACE TECHNOLOGIES

Abstract

Costa Rica is a Latin American country with a growing but very new space sector. Adding to that fact, the startup ecosystem is not ideal and many people tend to avoid the risk of embarking on a challenging and demanding life project such as being an entrepreneur. Orbital Space Technologies is a company that started in 2021 and offers mission logistics and hardware for experimentation in microgravity. It was founded by mostly women and engineering advanced students that had none to little knowledge about being entrepreneurs and running a business, but with the conviction that their technology is going to be successful. In 2022, the MUSA Suborbital Flight project was launched to space with the Swedish Space Corporation, and was carried out in collaboration with the Costa Rica Institute of Technology and the Costa Rican Association of Aeronautics and Space, being the second ever Costa Rican space mission, and the first one involving the private and public sector. This paper describes the challenges faced by Orbital Space Technologies, the first Costa Rican microgravity experimentation startup, during its first suborbital mission with MUSA Project. This flight was a system validation for the first stage of the project. We will describe challenges encountered during the planning, development and execution of the project, including financial, know-how/technical, human resource capital, access to materials/resources, and public relations.