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LESSONS LEARNED FROM A SATELLITE PROJECT - OBSTACLES AND ACCELERATORS

Abstract

Over the past years, many universities have become involved in space activities with CubeSat missions. This kind of projects offers the advantage of shorter development time, and reduced manpower and infrastructure requirements although there are issues connected with frequencies, launch opportunities, operations and survivability of the craft This paper is going to list and evaluate a series of lessons learned specifically focused on the design and integration phase, acquired by the team of the Institut Supérieur des Sciences et Techniques (INSSET) during participation in the QB50 project. Lead by the Von Karma Institute, QB50 is currently the most ambitious CubeSat program up until now, aiming to launch 50 satellites in low-Earth orbit on a single rocket launch in February 2016, to perform first-class science in the largely unexplored lower thermosphere. INSSET, which is a department of Université de Picardie Jules Verne, embarked in early 2013 in the QB50 project aiming to use on space systems its recognized expertise in embedded systems. Starting from a near-zero experience on space projects, INSSET team has managed to successfully pass QB50 major reviews, gaining a spot among the chosen satellites for the launch. In this process, a number of obstacles and accelerators have been identified to compose a series of lessons learned both on the technical, financial and managing aspects related to CubeSat projects developed in a university framework.