

30th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
24th Workshop on Small Satellite Programmes at the Service of Developing Countries (1)

Author: Dr. Paolo Marzioli
Sapienza University of Rome, Italy, paolo.marzioli@uniroma1.it

Mr. Edwin A. Sanchez-Camilo
INTEC (Instituto Tecnológico de Santo Domingo), Dominican Republic, edwin.sanchez@intec.edu.do

Dr. TATIANA VIANA
Sapienza University of Rome, Italy, tativiana@tiscali.it

Ms. Michela Boscia
Sapienza University of Rome, Italy, michela.boscia@gmail.com

Ms. Teresa Blanco
Panama, teresa.blanco@utp.ac.pa

Ms. Heidy Camargo
Panama, heidy.camargo@utp.ac.pa

Mr. Teresin Almanza
Panama, teresin.almanza@utp.ac.pa

Ms. Neyra Poveda
Panama, neyra.poveda@utp.ac.pa

Mr. Julio Santander
Panama, julio.santander@utp.ac.pa

Mr. Elvis Garcia
Panama, elvis.garcia3@utp.ac.pa

Ms. Abhy Verdurmen
Panama, abhy.verdurmen@utp.ac.pa

Ms. Megan Carrera
Panama, megan.carrera@utp.ac.pa

Ms. Dalys Villarreal
Panama, dalys.villarreal@utp.ac.pa

SPACE CAPACITY BUILDING PROGRAMMES IN DOMINICAN REPUBLIC AND PANAMA:
LESSONS LEARNED FROM THE FIRST NANO-SATELLITE DESIGN AND MISSION CONTROL
CENTER DEVELOPMENT

Abstract

Access to space for developing countries is a key task to be achieved to allow an increasing number of actors to be proactive in the aerospace sector and in the so-called New-Space-Economy, with a view to using space to improve the living conditions of its citizens in a sustainable and efficient way.

In this framework, satellite capacity building programmes, with focus to the development of University CubeSats in previously non-space-faring countries, are a precious opportunity to jointly launch the country-first satellite, together with the establishment of local Space Associations and Space Foundations, as well as the training of personnel specialized in the governance of space activities and the main current international juridical obligations.

The Italian-Latin-American International Organization (IILA), with the support of the S5Lab research team at Sapienza University of Rome, has started a research programme named “Space at the service of research, innovation and sustainable economic development in Latin America” and supported by the General Directorate for the Cooperation on Development at the Italian Ministry for Foreign Affairs and International Cooperation. The project is aimed at capacity building in astronautics in Dominican Republic and Panama. The Programme, which will have a first phase duration of 18 months, is primarily aimed at developing a Mission Control Center (MCC) and ground stations in the two listed countries and at supporting the development of their country-first CubeSats.

The project has started in late 2022. The main institutions involved in the hosting countries are the Technology Institute of Dominican Republic (INTEC) and the Technology University of Panama (UTP). The project first phase will be aimed at the development of ground station antennas and MCCs in the hosting countries and at the education and training related to CubeSat operations and AIV activities. The first phase will end with the finalization of the CubeSat assembly, functional testing and environmental qualification. A future second phase is foreseen with the aim of securing a launch opportunity, with the launch acceptance of the two payloads and with the actual launch and in-orbit operations.

This paper deals with the Capacity building project aimed at developing the first satellites of Dominican Republic and Panama, in cooperation with IILA and with the support of Sapienza S5Lab. The first sections will describe the satellites Critical Design and MCC concept, while the further sections will be dedicated to future plans and lessons learned from the completed activities.