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SPACE EDUCATION INITIATIVES FOR CAPACITY BUILDING IN PANAMA

Abstract

Space-related initiatives have been promoted in Panama since the early 2000s, with an initial focus in Astronomy, Physics, and Space Sciences. Since then, several steps have been taken to increase the countries' presence in the regional Space development, especially in the educational sector.

In 2015, the Technical Committee for Space Affairs was created with members from the academia, private industry, and governmental institutions, to serve as an advisory entity for national Space-related topics such as the development of Cubesat projects, ground stations for telemetry and control, registration of commercial telecom satellites, among others.

In 2016, The 1st National Congress of Space Sciences was held by the National Secretary of Science and Technology (Senacyt), and the COSMOS group was created to promote Space activities from the governmental side. Participation in global and regional competitions such as NASA Space Apps challenge, Olympics of Space science, CubeDesign, among others, were coordinated by different universities, and public institutions, capturing the attention of high school and university's students.

The emergence of the Space Generation Advisory Council (SGAC) in Panama in 2019, greatly increased the interest of the Space sector in the country, especially in students and young professionals, by implementing activities such as the "Panama Space Speaker of the Month webinar series", online workshops, and forums dedicated to Space.

The Catholic University Santa Maria la Antigua (USMA) also contributed with the creation of the course: Introduction to Space Engineering in 2019 (first one in Central America), which later evolved to an open-course offered to several countries within the SGAC framework. Other institutions such as the Instituto Tecnico Superior Especializado (ITSE) are currently designing academic programs in Space fields for students transitioning from high school to undergrad.

Several countries in Central America such as Costa Rica, Guatemala, and soon Honduras, are taking advantage of Cubesat missions as a first step towards a more robust National Space industry, and Panama might follow a similar model.

This paper will detail key-activities promoted in Panama that are leveraging the presence of the country in the Space development of the Latin America region: It will explain how the course Introduction to Space Engineering originated, the methodology used, and the curriculum for undergrad level students. An overview of PANASAT-1, a 1U Cubesat currently in the mission design phase, lead by students and professors from different universities and institutions will be provided. Finally, the paper explores Cansat initiatives as a tool to involve high school students in hands-on Space activities.

The impact, the future steps, and short/medium/large terms goals of these initiatives will also be explained.