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Author: Mr. Carlos Alvarado

Central American Association for Aeronautics and Space (ACAE), Costa Rica, carlos.alvarado@acae-ca.org

Dr. Julio Calvo-Alvarado

Costa Rica Institute of Technology (ITCR), Costa Rica, jucalvo@itcr.ac.cr

Ms. Ana Julieta Calvo-Obando

Costa Rica Institute of Technology (ITCR), Costa Rica, ajcalvo@itcr.ac.cr

Mr. Luis Carlos Rosales Alpízar

Costa Rica Institute of Technology (ITCR), Costa Rica, luis.carlos.rosales@gmail.com

Mr. Johan Carvajal-Godínez

Costa Rica Institute of Technology (ITCR), Costa Rica, johcarvajal@itcr.ac.cr

Mr. Adolfo Chaves Jimenez

Delft University of Technology (TU Delft), The Netherlands, a.chavesjimenez@tudelft.nl

Dr. René Castro-Salazar

Ministry of Environment and Energy of the Republic of Costa Rica, Costa Rica, rene.castro.cr@gmail.com

ADVANCES FOR THE MISSION OF THE FIRST CENTRAL AMERICAN SATELLITE: THE ROLE  
OF THE GOVERNMENT, INDUSTRY AND ACADEMIA OF COSTA RICA

**Abstract**

The Central American Association for Aeronautics and Space (ACAE, in Spanish) continues to work towards inspiring the Central American talent with the objective of integrating the region in the technological paradigm of aerospace development.

In 2012, ACAE announced to the national and international media its intentions to develop the first Central American satellite, a one unit CubeSat, planned to be completely designed and built by Costa Rican students and professors. The planned device will retransmit daily values of CO<sub>2</sub> flows, measured by a system of sensors located in a pilot area of the dry tropical forest of northern Costa Rica. Such information is of special interest for scientists and political decision-makers on climate change issues, and the mission is aligned with the national goal of become Costa Rica the first carbon-neutral country of the world. The aim is that this system will be possible to implement in other nations with same necessities, especially on RED++ members located in the tropical belt of the world.

Since the 63th edition of the International Astronautical Congress, ACAE has shown to the world's scientific community the progress and achievements of this project, let them tracking the process and measuring its impact in a middle-income country with no previous experience in the development of space projects like the Republic of Costa Rica.

In 2013, ACAE signed agreements with the President of the Costa Rica Institute of Technology (ITCR), and the Costa Rican Engineering Federation (CFIA). Furthermore, ACAE developed the concept of the mission under the senior advising of Ad Astra Rocket Company, a Costa Rican-American aerospace company owned by the former US astronaut Franklin Chang Díaz.

In 2014 a keystone success was reached from the point of view of the impact of the CubeSat project, when ACAE announced the official support of the President of the Republic of Costa Rica, Ms. Laura Chinchilla Miranda. The President commanded funding for this project to the Ministry of Environment and Energy (MINAE) and the National Forest Finance Fund (FONAFIFO).

Currently, the mission and requirements of the project are defined, and the preliminary design stage of the CubeSat is in progress. This paper will explain the advances of the mission and the remarkable role of the government, industry and academia of Costa Rica, supporting the project and outreaching its impact in the civil society.