27th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
21st Workshop on Small Satellite Programmes at the Service of Developing Countries (1)

Author: Dr. Rafael-Guadalupe Chávez-Moreno
School of Engineering, National Autonomous University of Mexico, Mexico

Dr. Jorge Alfredo Ferrer Perez
Universidad Nacional Autónoma de México, Mexico
Dr. Carlos Romo Fuentes
Universidad Nacional Autónoma de México (UNAM), Mexico
Dr. Alberto Ramirez Aguilar
Universidad Nacional Autónoma de México (UNAM), Mexico

GENERAL DEVELOPMENT OF THE MEXICAN NANOSATELLITE K'OTO: METHODOLOGY AND DESIGN

Abstract

The aerospace industry (aeronautics and space) in Mexico has grown significantly in the last 10 years being a sector in constant evolution. However, until a couple of years ago, when talking about aerospace industry, reference was made to the aeronautical industry exclusively, leaving aside the space industry, a situation that has gradually changed. The Mexican space sector is formed by actors from the triple helix: industry, academy and government, where the academy as a paramount role in the development of the space sector in Mexico. For this reason, highly trained human resources is essential to satisfy the national demand and foster the development of the Aerospace industry.

For Mexico, it is essential to have satellite technology that contributes to the solution of the country's problems such as the prevention of natural disasters, which allows immediate and well-planned actions to be taken, in addition to developing disaster prevention programs. The role of aerospace technology in security applications is central and can be understood through its three great capabilities: communicate, observe and locate.

This manuscript presents the methodological and technological development of the K'OTO nanosatellite. This satellite is developed in the Advance Technology Unit (UAT-FI UNAM) of the School of Engineering of the UNAM, at the Juriquilla campus under the CubeSat standard. K'OTO aims to contribute to the technological development and specialized human resources in the space area, promoting the development of national technology with social impact benefiting the quality of life of the Mexican population. This project there is the participation of both academic and private international institutions. Its launch and deployment is expected for mid-2021 through the Kibo module located in the ISS.