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## K'OTO PROJECT, A LEAP INTO THE SPACE FOR MÉXICO

### Abstract

The aerospace industry in Mexico has grown significantly in the last ten years and it is a sector in constant evolution. However, when is talking about the aerospace industry, reference was made to the aeronautical industry, leaving aside the space industry until a couple of years ago.

Recently, significant advances have emerged in the Latin-American space sector because the needs and technologies in this industry have accelerated, fostering the development of a new space age. This has generated significant technological and industrial development opportunities in Latin American countries.

This document presents the K'OTO project, which consists of the development of a Mexican nanosatellite based on the CubeSat 1U standard, whose mission is the remote perception of the Mexican territory through images in the visible spectrum, being a technological demonstrator.

It's an initiative directed by academics and university students from the National Laboratory of Space and Automotive Engineering (LN-INGEA), of the Advanced Technology Unit of the School of engineering of the National Autonomous University of México (UAT FI-UNAM), with the support of the Secretariat of Sustainable Development (SEDESU) of the Querétaro State Government, for which a multidisciplinary and multi-institutional work team has been assembled, made up mainly of undergraduate students.

The purpose of K'OTO is to encourage the development of the space industry in Mexico, having as priorities the generation of human resources and the development of national technology, as well as

awakening interest in the young public about this sector, achieving the leap technology from Mexico into space.

Within this document, the management and engineering challenges of space systems applicable to the development of the K'OTO project are addressed, making NASA's NPR 7120.8 a reference. Subsequently, each subsystem that makes up the nanosatellite is presented in detail.

Finally, the experience obtained from the management, design, and implementation of the K'OTO satellite, through remote work techniques due to the current COVID-19 pandemic, allowed the project's development and the training of human capital specialized in the space area.