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FIRST COSTA RICAN NANO SATELLITE GENSO GROUND BASE STATION: MATERIALIZING
EFFORTS.**Abstract**

In Costa Rica's recent years, state institutions, non-governmental organizations and academia, have united to introduce the country and Central America region in a competitive way into the aerospace field. Many of these efforts, led by the Central American Aeronautics and Space Association (ACAE for its Spanish acronym), have been developed by Costa Rican undergraduate students and researchers abroad. With the desire to materialize all these efforts, it emerged the work and research of installing a nano satellite communication ground base station.

This paper deals with the initial results of the installation of the first ground base station of the Central America region, which will belong to the Global Educational Network for Satellite Operations (GENSO network). GENSO consists in a worldwide network of ground stations and spacecraft which can interact via a standard software. This network aims to increase the return from educational space missions and changed the way that these missions were managed before. The GSS (Ground Station Server), is the first requirement for being accepted at GENSO network, so the construction of this base will benefit the country for more economic investment. This work proves that undergraduate students have the right tools and skills to lead an intermediate developed country to its incorporation in the space field. This is the first concrete step done in the country for the launch of the first Nano Satellite region, *DSpace*, developed by ACAE and the two main universities in Costa Rica: Costa Rica Institute of Technology and University of Costa Rica.

As a result, this station will provide greater spatial and temporal coverage for the spacecraft (thus increasing the current temporal interval that many actual nano satellites spacecraft have). This will dramatically enhance the impact of the project because it will improve the redundancy of information (confirmation of transmitted information), increase the service life, higher return of investment and critical operations would benefit from the ability to have global coverage. In addition, this project is a clear example that there are inexpensive alternatives for countries as Costa Rica to invest and participate in the aerospace industry.