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CONSTRUCTION OF AN EARTH STATION AND DIMENSIONING OF A CONTROL AND TRACKING CENTER FOR DRONES AND SATELLITES IN LOW ORBITS

Abstract

Since 1958, Angola has witnessed 3 major moments of participation in the international space exploration scene: • 1st construction of the Mulemba Space Observatory in 1958; • 2nd Construction of the 1st Angolan Satellite Terrestrial Stations in July 1974; • 3rd signing of the ANGOSAT 1 Project contract and Creation of the National Space Strategy, in 2009.

Nowadays, the impact that space science and technology has on our lives is notorious. The satellite also gives us the opportunity to see the evolution of forests, activities such as deforestation, rising sea levels, coastal erosion and maritime pollution. All of this can be easily seen with satellites, "says Simonetta Cheli" The use of communication satellites is relevant for accessing the Internet, television and radio, contributing to accessing information and building a participatory democracy.(GGPEN).

The advantages of using drones are accessibility, since in maintenance they reach places that can be a risk area for man. The coupled cameras manage to have high resolution. The use of drones has been growing a lot in the last years and with that, new ideas appear to facilitate the daily life of the human being. Drone inspections offer many advantages: Avoid hazardous work at the height of the operator, Quick view and assessment of equipment conditions, Accurate and detailed photography of defects, Inspection of difficult-to-access areas.

The research carried out shows that Angola registers about 4 registered companies that provide drone services, and others that are not yet registered, and how we can verify the use of both drones and satellites in the last decades have been growing at a very fast pace , and more and more universities are working with cansat and cubsat. Angola occupies the 149th position (among 169 countries) in the Sustainable Development Ranking, after 85 of the 244 indicators, having evaluated 169 objectives identified by the United Nations to guarantee "The Future We Want" for the 2030 Agenda.

The construction of an Earth Station and Dimensioning of a Control and Tracking Center for Drones and Satellites in low orbits, in Angola this feat aims to improve the control of space, since Angola is part of the intercontinental Aerospace command, it may share infrastructure of spatial data recession, we will be autonomous and we will follow the national space strategy for the agenda until 2025, this station will be built in Angola in the city of Luanda, we will use the orbitron software which is a satellite tracking system for radio amateurs and for purposes observation systems, Satnogs antennas, and will have the following materials, Raspbery, Piping, Conductors, Computer Amplifiers, Container (mobile), which are budgeted at R 10, 055.

The expected results of the construction of the earth station are: 1. Communication between the ground station

and the space station, being able to send commands and receive telemetry data; 2. Collect data from drones and Satellite, reporting in real time the state of space vehicles, showing the geographic coordinates that are found.

Keyword: Satellite, Drone, and Earth Station