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THE FIRST ETHIOPIAN REMOTE SENSING SATELLITE (ETRSS-1): MISSION INFORMATION
AND OVERVIEW

Abstract

Ethiopia has launched its first ever earth observation microsatellite, ETRSS-1, on the 20th of December 2019 in collaboration with the government of China. The 70kg weighting satellite was launched at a launch site in China on-board Long March 4B as a secondary payload and has been delivered in a sun synchronous orbit of 628km altitude. The provision of the satellite by the government of China was for addressing climate change and related issues recalling that climate change and its adverse effects are common challenges of mankind. Ethiopian Remote Sensing Satellite (ETRSS-1) carries one multi-spectral camera as its payload operating in the spectrum bands of Blue, Green, Red and Near Infra Red. This microsatellite has been launched to provide first hand earth observation data mainly on the territories of Ethiopia, Middle East, Africa, and other regions of interest over the globe. The data received will be used for major thematic applications like agricultural monitoring, water resource management, forest cover mapping, disaster and drought monitoring, and for the applications in weather and climate change analysis and predictions. The satellite has been developed with the support of China Academy of Space Technology (CAST). In the development of this microsatellite Ethiopian engineers and scientists have participated at different stages of its development such as preliminary design, critical design, ground operation, data analysis, and other trainings. This joint development and collaboration has contributed a lot for technology transfer in enabling the capacity of Ethiopian engineers in space technology and applications. It is also believed to change the country's dependence for remote sensing satellite data on foreign countries. The collaborations seen in this microsatellite has shown the scenario in which developing nations could participate in scientific and technological transformation of the world and tackle our common challenges of climate change, environmental degradation, human insecurity, poverty, and other challenges towards achieving sustainable millennial development goals. The launch of this satellite has been a big motivation to the young and the elderly in the country and has paved the way for other high capacity satellite projects. Following the achievement, Ethiopians have shown the oath to strengthen their capacities in space science and technology researches.

Key words: Microsatellite, ETRSS-1, remote sensing, earth observation, space technology, millennial development goals