

26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
20th Workshop on Small Satellite Programmes at the Service of Developing Countries (1)

Author: Mr. Yasir ABBAS
Kyushu Institute of Technology, Japan, yasir.m.o.abbas@gmail.com

Dr. Kenichi Asami
Kyushu Institue of Technology, Japan, asami@mns.kyutech.ac.jp

THE IMPACT OF THE SUDANESE 1ST CUBESAT PROJECT, KN-SAT1

Abstract

In recent years, many of universities and institutions that are adopting the concept of the CubeSat program are paving their countries' way in the space field. Establishing a small satellite project allow all the involved personnel to grasp theoretical and practical knowledge regarding the design, the implementation, the accompanied scientific subjects and the management aspects of the field. I.e. Electromagnetics, Antennas and Wave Propagation, Transmission Lines, Astrophysics, Automation and Control, satellite mission design, space program management, space law, etc. One of the greatest benefits can be addressed is that the country gets in touch with a technical community over the world that is eager to help, the institutes receive other small satellites data, participants analyzes these data to have a good insights which help them in developing their own systems. In Sudan, University of Khartoum (UofK) has initiated the CubeSat program in 2010 and adopted the educational value behind the program. The project was called KN-SAT project, it never launched a satellite to the orbit but in the ground segment, a high standard educational ground station was designed and built in the faculty of engineering. In the space segment, prototypes have been designed and manufactured in the university labs. In the capacity building the projects trained number of engineers, academics and managers and most of them are doing useful contributions in the space maturity of Sudan. Although the project wasn't fully successful, it had a high positive impact on Sudan, and it is still fruitful! This paper focus on the influence done by the project in the space filed in Sudan, both directly and in directly. It also gives some technical and most importantly managerial overview about the project to give a general understanding about the situation during and after the project. The now position of the pioneers who started the project is traced and stated within the paper. The organizations and institutes established because of the project are listed and linked by their current status. The previous and foreseeable impact on Sudan's policies and regulation regarding the space is also studied. The paper takes Sudan as a case study for developing countries and it goes through the obstacles and difficulties faced the Sudanese project i.e. technical, financial, managerial, and political, its lesson learned and the needs that could make the space sector in Sudan much better as well as similar countries.