Paper ID: 42353
oral
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25th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Satellite Missions Global Technical Session (9-GTS.5)

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GALAMSAT2: FIRST GHANA SATELLITE TO MONITOR ILLEGAL MINING ACTIVITIES

Abstract

Illegal mining activities popularly known as "Galamsey" in Ghana is one of the major national problem causing lack of clean drinking water and sanitation problems .About 70 percent of the health issues in the rural areas in Ghana is as a result of Galamsey activities. Existing technology to monitor such activities on ground has not been able to provide adequate information to the national environmental protection agency and national security in the country. All Nations University Space System Technology Laboratory (ANU-SSTL) is the first private institution to launch Ghana first satellite (GHANASAT-1) into orbit on July 7, 2017 to bridge the gap of space innovation activities in Ghana. The ANU-SSTL team decided to develop new satellite known as GALAMSAT-2 to monitor illegal mining activities. The Galamsat -2 shall be a 3U Cubesat with on board high resolution camera and a store and forward payloads sensors to measure mercury and cyanide contaminating the drinking waters in our rural areas.. GALAMSAT -2 shall have on board attitude determination subsystem to able to focus the cameras on ground and also achieve good communication with our ground station. GALAMSAT-2 is now in the system design review phase and is expected to be launch via the Japan/ Kibo ISS deployment system in the mid of 2019. This paper will present details of Galamsey and its impact on the national health and the economy of Ghana , the road map of ANU-SSTL activities and progress report of the GALAMSAT-2 project.