SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

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THE FIRST SIGNS OF "SPACE FRUITS" FROM THE INTERNATIONAL STEM COLLABORATION BETWEEN THE UNIVERSITIES OF ALABAMA IN HUNTSVILLE IN THE UNITED STATES, AND THE CAPE PENINSULA UNIVERSITY OF TECHNOLOGY IN SOUTH AFRICA

Abstract

The international collaboration between the University of Alabama in Huntsville (UAH) in the United States (US), and the Cape Peninsula University of Technology (CPUT) in South Africa, which came into being during 2012 is well documented. The initial focus on Science, Technology, Engineering, and Mathematics (STEM) tools to promote aerospace education in order to continue to foster an internationally cooperative workforce that will have the desire and skillset necessary to achieve future spacefaring goals is showing signs of bearing "space fruit". These first indications that this international collaboration between UAH and CPUT is maturing is noticed in some young South Africans who are seeking a STEM education and career opportunity at CPUT in its young but growing satellite programme. This programme is one of the main feeders of young black South Africans into the small but growing South African satellite market and who are seeking to pursue careers in the Space Science and Technology environment. In 2009, the French South African Institute of Technology (F'SATI) initiated a postgraduate programme in satellite systems engineering at CPUT in order to address the Human Capacity Development (HCD) required to support the national space industry. In the F'SATI model, students are awarded Master's degrees from CPUT as well as from l'Ecole Supérieure d'Ingénieurs en Electronique et Electrotechnique (ESIEE) in Paris, France. There exists a similar agreement for a dual doctorate degree.

The F'SATI programme launched its first CubeSat, ZACUBE 1 and was awarded a government contract to development and launch ZACUBE-2, which is a precursor mission to MDASat – a constellation of 9 nano-satellites. This will be followed by a shared industry and university effort to launch further nano-satellites under the PHAKISA umbrella. This paper aims to highlight the efforts and contribution the international collaboration between UAH and CPUT has brought to the F'SATI programme. It also intends to elaborate on the contributions the young satellite engineers are making towards building the satellite industry through projects like ZACUBE -2 and PHAKISA