IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (IP)

Author: Prof. Prashanth Marpu
Khalifa University of Science and Technology (KUST), United Arab Emirates

Mr. Thu Vu Trong
Khalifa University of Science and Technology (KUST), United Arab Emirates
Mr. Carlos Niederstrasser
Northrop Grumman Corporation, United States
Dr. Efthymios Akis Kontogiannis
Yahsat PrJSC, United Arab Emirates

# EXPERIENCES FROM THE FIRST GRADUATE PROGRAM ON SPACE TECHNOLOGY IN THE UNITED ARAB EMIRATES

**Abstract**

In 2015 Yahsat, Orbital ATK (now Northrop Grumman), and the Masdar Institute of Technology (now Khalifa University) created the Gulf region's first master's level advanced studies space program. To date this program has graduated three classes of master's students and received accolades from the UAE Space Agency and Abu Dhabi's Mubadala Investment Company. The program's primary goal is to develop the resources and work force that the UAE requires to establish itself as a space-faring nation. Integral to this program are small satellites, initially used to train and educate the students and ultimately growing to accommodate new technologies and scientific payloads developed in the UAE. This program has graduated three classes of master's students with involvement in four CubeSat projects. The first of these small satellites, a 1U CubeSat named MYSat-1 was launched in November of 2018 and deployed from the Northrop Grumman Cygnus in February 2019. All the ground segment operations are being carried out by the students through the ground station established at the university. Three more CubeSats are scheduled to be launched by 2020. In this paper, we present the role small satellites played in the establishment of this program and how the students involvement also contributed to developing research theses aimed at developing novel components and concepts. Almost all the students enrolled in the program did not have any prior aerospace background and went through the process of designing and building the CubeSats while being actively monitored by the industrial partners. The program established a successful model for developing space education programs and this paper highlights the challenges faced in this journey. Some of the future initiatives will also be presented with an overview of the desired outcomes.