IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Virtual Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (VP)

Author: Dr. Mohamed Ibrahim
Egyptian Space Agency (EgSA), Egypt

Mrs. Amira Hosny
Egyptian Space Agency (EgSA), Egypt
Mr. Mohamed AL-Emam
Egyptian Space Agency (EgSA), Egypt
Mr. Hussien Ashour
Egyptian Space Agency (EgSA), Egypt
Mrs. Reham Mahmoud Abd El Fattah
Egyptian Space Agency (EgSA), Egypt
Mrs. Safaa Ibrahim
Egyptian Space Agency (EgSA), Egypt
Mr. Mahmoud Ismail
Egyptian Space Agency (EgSA), Egypt
Mrs. Amira Hussein
Egyptian Space Agency (EgSA), Egypt

EDUCATIONAL SATELLITE TRAINING KIT (ESK-LAB)

Abstract

Satellite technology education is one of the Investment in people (IIP) technique; and important to building the space workforce with higher skilled human resources that is capable of achieving sustainable development goals (SDGs). Providing an experimental way for teaching these technologies will create unique opportunities for students to understand and explore satellite subsystems. The Educational Satellite Kit (ESK-Lab) design to give to the students a hands-on space education and Outreach with understanding and exploring concepts in electrical design, mechanical design, software design and systems engineering by using the subsystems and functionality of a spacecraft. Hardware and exercises design to give the students of engineering hands on experience in satellite testing and operation. (ESK-Lab) even provides satellite subsystem boards that allow advanced students to design their own payload and learn about control, operation, and data acquisition. The instructor will find the full space system course curriculum with a lot of exercises can be applied direct on the kit, some are more advanced than others and the intent is to offer a set of base exercises that illustrate the operation of all the elements of (ESK-Lab). The instructor will need to tailor these exercises to the needs of their students. Through the (ESK-Lab) organization instructors can exchange ideas and laboratory exercises. It is important to point out that (ESK-Lab) design such that it can be used in courses that provide high-level overviews of Spacecraft subsystems and their interrelationships, but it can also be used to teach principles of systems engineering, and even detailed design engineering. (ESK-Lab) come with the different satellite payload type to simulate the Earth Monitoring, weather monitoring applications, communication application, navigation Application and space environment effects.