

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

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APSCO SPACE EDUCATION AND PRACTICE BASED ON SSS PROJECT

Abstract

APSCO Student Small Satellite SSS project is sponsored by Asia-Pacific Space Cooperation Organization in 2016, which aimed at new technology demonstration and verification, basic space technology training for students from Member States of the APSCO to study space technology and satellite engineering. There are three satellites: one micro-satellite(SSS-1), two 3U-CubeSats(SSS-2A and 2B). The SSS mission includes remote sensing(visible light camera), air traffic management (ADS-B), space deployed mechanism(coilable mast), GNSS (GPS/BD2 receiver) and inter-sat communication technology demonstration and verification. Moreover, the APSCO University Ground Station Network also will be established among APSCO member states.

The important aspect of SSS project is the space education(focus on postgraduates) for APSCO member states. It is carried out by the Regional Centre for Space Science and Technology Education in Asia and the Pacific (RCSSTEAP, (Affiliated to the United Nations), which is located in Beihang University. the Centre has offered degree and non-degree programs in the field of space technology applications including RSGIS, SATCOM, GNSS and Basic Space Technology.

In this paper, the APSCO SSS mission and application is presented, the system design and configuration is overviewd. The micro/nano-satellite platform (structure, thermal, EPS, OBDH, ADCS and TTC) are designed. Some of the key technology is analysed. The specific space education in RCSSTEAP also is presented, which covers the education curriculum, pilot projects and hand-on practice training based on SSS project. Some useful lessons learned are shared not only on the knowledge but also on the understanding gained by the space engineering experience, which will contribute the university micro/nano-satellite RD and application in the future. Finally, it propose the viewpoints on the space education and training collaboration with UN member states and other regional centres.