Paper ID: 39600
oral
student

24th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
18th Workshop on Small Satellite Programmes at the Service of Developing Countries (1)

Author: Dr. M.Rizwan Mughal
Institute of Space Technology (IST), Pakistan

ENHANCING SPACE EDUCATION, ACCESSIBILITY AND DESIGN- PAKISTAN PERSPECTIVE

Abstract

The developing countries have a lower capacity to design and use space technology than those of more developed countries. There are not much signs of indigenous design and use of space technology in general and satellite technologies in particular in the developing countries because of the lack of awareness of the beneficial use of satellites and also the expertise. The research suggests that the countries with developed capabilities in the use of integrated space technology can take certain timely measures to avoid damage due to some of the effects of the climate change than those with no space expertise.

Pakistan is well aware of the beneficial use of space program and has initiated a lot of steps in order to enhance the capacity building in the space related research and development activities. In this regard, the Institute of Space Technology (IST) located in Islamabad Pakistan has been striving for the betterment in accessing space, educating people in the space related fields and also in the design of space systems. A lot of effort has been done in the use of satellites for environment monitoring including sea-level rise, deforestation trends, earthquake aftereffects and changes in glaciers which are difficult to observe from the ground.

The institute has a long tradition of space endeavours and we have very recently launched a CubeSat, called iCube-1 and we are currently working on Icube2, ARAMPAK and APSCO student satellite projects. The innovative, flexible, modular and plug and play design approach is used in the design of ARAMPAK and APSCO small satellites which will be presented. The approach takes the panels so called tiles of any desired size with all the electronics and control integrated on it. Multiple tiles can be connected together to achieve any desired satellite architecture. The second most related area is the satellite data analysis. The use of the satellite data for every country in general and developing country like Pakistan in particular, is the need of the time because the natural calamities do occur. The best example is the 2005 earth quake in which a lot of lives would have been saved if the modern techniques were used to analyse the most affected areas. Therefore it is the need of the time for the developing countries to acquire expertise in the satellite technology and satellite data analysis techniques at their earliest, in order to remain in the space race.