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SPACE TECHNOLOGY INITIATIVES IN OMAN: INNOVATIONS, EDUCATION, AND GLOBAL
ENGAGEMENT

Abstract

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 climate change than those with no space expertise. The developing countries in space sector have a lower capacity to design and use space technology than those of more developed space nations.

This paper presents a few of the recent space technology initiatives in Oman, initiated in Sultan Qaboos University (SQU) in collaboration with several government, regional and international entities.

As part of our recent effort for the beneficial use of space technology, an Artificial Intelligence (AI) application in space has been started. The latest results on the algorithm developed by the university students under the AI rideshare program onboard a Newspace company shall be presented.

Another initiative is the Flying Imagers for Moon Exploration (FLI-ME) mission which is currently competing for a slot in the International Missions bay of the Chang'e-8 lunar lander scheduled to launch in 2028. FLI-ME provides real-time high-resolution imaging and subsurface excavation capabilities, enabling a comprehensive characterization of the landing site.

Another initiative is to use space technology and small satellites for STEM education in order to bring the advantages of space technology to Omani youth. In this regard, we will elaborate about the use of educational kits for space technology popularization.

In conclusion, the paper shall focus on key satellite design projects which are helping in space accessibility and education in the Asia and Pacific region and promoting space activities in the Sultanate of Oman.