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PAYLOAD SHARING PLATFORM AND MODULAR INTEGRATED DESIGN TECHNOLOGY FOR SMALL SATELLITES

Abstract

Getting into space is hard, but the race to launch the first satellite in space is getting favorite day by day to the non-space faring countries. Till date, still, only a few nations have technical capabilities and available funds to launch the satellite into orbit. Although some space fairing countries are providing technical knowledge to the non-space fairing countries for accessing space, it is challenging to make people understand in developing countries about effort and dedication behind a satellite project. Hence finding a big investor for launching and operating a dedicated satellite is very difficult for these countries. A payload sharing platform is proposed in this paper to continue the access to space and use of space-based technology and applications, which will take less time and money. Sharing platform like Airbnb, UBER or Facebook are getting popular in the world, and these are the most business profitable platform. This paper discusses a standard modular architecture where the hosted satellite can carry a payload from any country. This payload sharing platform is not only designed to share a portion of the satellite such as sensor or communication transponders but also support to carry the small CubeSat. Sharing a spacecraft bus will help to save significant launch cost and a platform to design a demonstrate new technologies with system engineering approach. This payload sharing platform will also help to build the space capacity of non-space fairing countries, particularly developing countries and will involve more countries to make space exploration accessible to everyone.