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Access to Space for Small Satellite Missions (5)

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PEPPOD: ON BOARD PLANTED ELEMENTARY PLATFORM FOR PICOSATELLITE ORBITAL
DEPLOYING

Abstract

The launch of satellites is the final and most critical phase of all space programs and it is troublesome for the launch services providers to interact with a great many customers of small dimensions satellites.

Several university systems and payloads have never been tested on space since they had not the possibility to procure a launch with a limited budget.

The possibility to integrate more small satellites in a single platform could allow to the university group to achieve the 'in orbit phase' with a reasonable price and to the launch providers to interact only with a customer that represent all the groups. For this reason GAUSS group at University of Rome is proposing to coordinate the universities for integrating the satellites in a unique platform ready to launch.

A preliminary test of this system called UniPlat is the on board Planted Elementary Platform for PicoSatellite Orbital Deploying (PEPPOD) that allows to integrate and separate 1U, 2U and 3U cubesats from UniSat microsattellites.

Next mission is planned to be launched on September 2012 with UniSat-5 microsattellite designed by GAUSS and launched by Dnepr Launch Vehicle.

The collision risk between the deployed satellites has been taken into account during the design of the separation procedure in order to avoid any kind of accident in orbit.

The platform has been designed to be boarded on a UniSat satellite, but it is possible to adapt the system also for other satellites. This paper deals with the design and preliminary tests of PEPPOD.