Paper ID: 45148
interactive

IAF MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Interactive Presentations - IAF MATERIALS AND STRUCTURES SYMPOSIUM (IP)

Author: Mr. Victor Leonov
Bauman Moscow State Technical University, Russian Federation

Mr. Dmitry Rachkin
Bauman Moscow State Technical University, Russian Federation
Mr. Anatoly Shapovalov
Bauman Moscow State Technical University, Russian Federation
Mr. Ivan Pushkar
Bauman Moscow State Technical University, Russian Federation
Mr. Konstantin Klimov
Bauman Moscow State Technical University, Russian Federation

DEVELOPMENTAL VERIFICATION OF THE LAUNCH OF CUBESAT FORMAT SATELLITES FROM SMALL SPACECRAFTS

Abstract

One of the projects being implemented in the framework of the Association of Sino-Russian technical universities and which is aimed at further development of scientific and technological cooperation between Russia and China is concerned with the design and implementation of a joint space mission involving design of interacting small spacecrafts.

For this mission, one of its purposes is to achieve developmental verification of the CubeSat format satellites launch from a small spacecraft and their subsequent interaction with each other including, in particular, testing the intersatellite communications and cloud technologies. An onboard container is capable of launching CubeSats of 1U–6U, the total capacity of the container is 12U. All the spacecrafts should match the jointly developed requirements regarding unified mechanical, electrical and traffic interfaces. The planned date of mission implementation is 2020.

In this report we provide the results of ground tests of CubeSats deployment from a small spacecraft. The results of experiments were used to refine the designed computer models, the structure of the container and its mounting hardware, as well as the sequence of deployment of satellites depending on their number and form factors.