

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)

Joint Session: Small Spacecraft Launch, Injection, and Orbit Transfer Systems (5.-D2.7)

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YUZHNOYE SDO-DEVELOPED SPACE ROCKET SYSTEMS INTENDED TO LAUNCH NANO AND MICRO SATELLITES

Abstract

In several recent years, owing to the rapid progress of electronics and new technologies, a stable trend has formed in the world's practice – building of nano and micro satellites. The majority of nano satellites belong to the Earth remote sensing satellite class and are injected into sun-synchronous orbits. A part of them are developed in the interests of defense departments of some nations for tactical echelon (communication, operational final reconnaissance, radio reconnaissance), the technological and “students's” nano satellites constitute the other part. The number of launched NS and MS constantly grows. The increase of launch rate of this spacecraft class raises a topical problem of the cost of payload injection into space, which leads to a search for principally new systems that would allow obtaining an economically acceptable solution of this problem. One of such systems is the system for spacecraft launch from manned carrier aircraft or unmanned aerospace plane (UAP) that are a launch platform for a rocket unit. The main task of the proposed Microspace-2 and Rassvet projects is building the space launch system for nano and micro satellites. The projects meet the present-day demands on the launch services market for spacecraft of their class. A number of systems are based on the space technologies that have been tried out in flight conditions, at the same time, a diversity of innovative technological solutions is proposed. The paper presents a general description of Microspace-2 and Rassvet projects and their basic characteristics.