

Problem Issues of Creating Multisatellite Orbital Constellations Based on Small Spacecraft

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Abstract. The paper studies problem issues of creating multisatellite orbital constellations based on smallspacecraft. It is shown that creation of such constellations is a new trend in the world space industry that requires application of system design and control methods. In accordance with the basic space system structure, the classification of problem issues is realized and possible solutions are offered. Special attention is paid to the issues of multisatellite constellation control as a complex system based on homeostasis principles. Factors leading to system degradation are considered and ways of its counteraction are proposed. A conclusion of the feasibility of national small satellite building industry organization is made.

Keywords: homeostatic control methods, space system, multisatellite orbital constellation, small spacecraft