

Technology Roadmaps for Space Exploration (09)
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SOME ASPECTS OF ENGINEERING FEASIBILITY OF AN AUTOMATIC COMPLEX FOR
NON-COOPERATIVE OBJECTS CAPTURING AND DEORBITING**Abstract**

Today one consider to be topical the technical issues on development of an automatic complex for in-orbit capturing of the objects, which constitute a real threat for the operating spacecraft or the mankind on the Earth. There is a common understanding that the contaminated space becomes dangerous to the active spacecraft operating in the near-Earth orbits. That's why the problem of evacuation of the non-cooperative, damaged or waste objects from the Earth orbit grows more critical. Some activities in this field have been actively conducting in the countries – space users. In Russia the Lavochkin Association team has studied some technical aspects of the system capable of in-orbit objects' capturing, and their subsequent safe deorbiting or transfer to the graveyard orbit. The most promising option can become a unified system for satellite in-orbit servicing developed on the basis of a multipurpose space transportation module (MSTM) capable of the following: visual inspection; docking and fixing of the object for its subsequent controlled de-orbiting and submergence; in-orbit objects' servicing operations (units' replacement, repair operations, additional equipment installation, etc.).