

21st IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)
Innovative Concepts and Technologies (1)

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SATELLITE RE-ENTRY SYSTEM - PROPOSAL FOR REUSABLE SATELLITE TECHNOLOGY

Abstract

Nowadays, we are highly sophisticated in space exploration and have immense growth in satellite technology and development. The process of disposing of space objects (such as dysfunctional satellites, and unusable parts of space vehicles) as per the conventional methods, has been able to produce a lot of issues on our planet's atmosphere and affects the Albedo of Earth. Our proposed study of developing a re-entry system for the satellites would enhance the technology in the reusability of satellites. We are developing this re-entry system in two main categories: i) an In-built segmented re-entry system for large observational satellites; ii) the development of on-orbit spacecraft to capture the small satellites in orbit (compiled in a complete shielded system for collective satellites). Our re-entry system is entirely designed with a robust mechanical structure and facilitated with an automatic flight attitude control system along with autonomous technology, working closely on necessary safety standards. Another novel outcome of the re-entry system could pave a new technology in re-entry transportation, a significant step towards reducing the negative impacts of debris on our planet's atmosphere and surveying the active and inactive satellites in our planetary system in the future. The proposed technology is at the preliminary stage of specifying a material and applicable design for the re-entry system. Currently, the design and mechanism are under simulation to evolve the real time use within a decade.