

How to catch a space debris

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Project Description

The partnership between SpaceR and Spacety-Luxembourg aims to develop **cutting-edge active-space debris removal solutions that can be implemented into small cube-sats**. The solution will take the advantage of latest advancements in many tech domains, such as gecko-like sticky adhesives and energy efficient shape-memory alloy materials.



130 Million
objects
smaller than 1
cm



900k objects
between 1cm
– 10cm

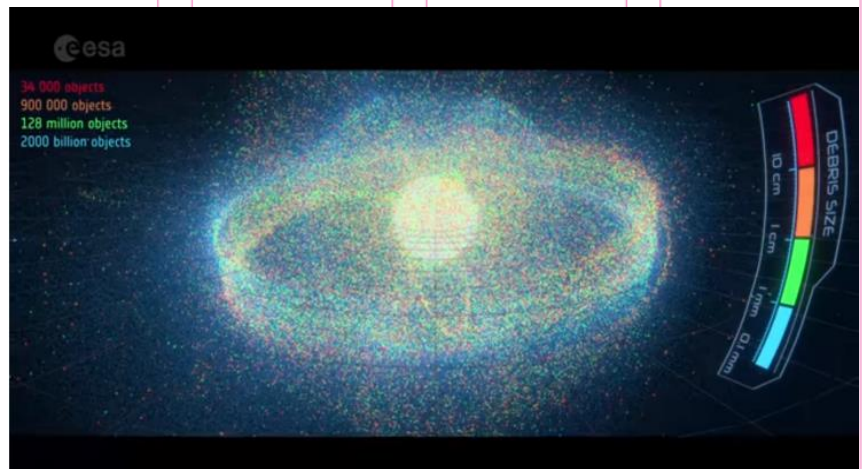


Fig. 1: ESA's space debris illustration [1].

Project Objectives

- ➔ Designing a cutting-edge, state-of-the-art space debris capturing solution
- ✓ The solutions does not only require the design of a capturing mechanism, but also the whole system, such as compliance, extraction/retraction mechanism.

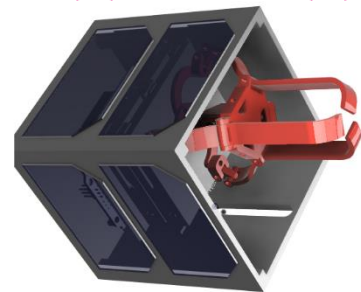


Fig. 2: A concept work of a capturing mechanism integrated in a cubesat.

SpaceR and Spacety-Luxembourg will have collaboration in the below given activities;

- Know-how sharing for the hardware integration of different subsystems of active space debris removal mechanisms.
- Potential market outreach for In-orbit Servicing missions as well as protective appendages from a main mission.
- Marketing and advertising the developed product.

Technologies that will be used;

- ➔ Shape-memory alloys
- ➔ Gecko-like sticky adhesives

References:

[1]: www.esa.com

In collaboration with:

SPACETY-LUXEMBOURG

