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## FEASIBILITY STUDY OF MATERIALS FOR TRIS SYSTEM'S CATCHING SHIELD

**Abstract**

Students, researchers and professors of GAUSS (Group of Astrodynamics of University "Sapienza") at School of Aerospace Engineering of Rome are involved since 1999 in a space program with the aim to design, manufacture, launch and operate in orbit small educational satellites and to observe space debris. Using the SPADE observatory (SPAcE DEbris) the group is participating in IADC (Inter-Agency space Debris Coordination Committee) coordinated campaigns. Actually GAUSS students are analysing a triple CUBESAT mission for space debris removal, studying a feasibility of a low cost solution: the TRIS mission (Triple-cubesat to Remove and Identify Spacedebris). The project's goal is to design and build a satellite that can hit space debris. This paper deals with the selection of the materials to perform the "catching shield". In this framework, the principal aim is to guarantee the satellite's survivor after impacts, materials' capability to hold back debris impacted and certainty of no generation of new debris by TRIS. Due to this low cost mission, different solutions have been analyzed considering also not only space qualified materials.