



## **“Debris capture technologies overview”**

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### **--- ABSTRACT ---**

The debris mitigation as possible space activity has reached an emphasized attention in Europe since the sudden dismissing of the Envisat satellite, where EU had to face the ethical and legal issues coming from the property of huge inert assets surely falling on Earth in an undefined future with harmful potential threats both related to the uncontrolled fall and on the uncontrolled orbiting.

Aviospace, part of the Airbus Space and Defence group, is engaged since then – also thanks to internal funding – in several research programs focused on the debris capture techniques and their impacts at system level on the architecture of the chasing spacecraft.

A summary of some major outcome is described in the present paper.

### **--- SUNTO BIOGRAFICO DELL'AUTORE ---**

Franco Alberto Fossati (born in Italy in 1963, MoS in Nuclear Engineering in 1988). In 1989 he joined the Mechanical Design Department of Space Systems Group of Aeritalia (now Thales Alenia Space Italia), assuming increasing responsibilities in the fields of manned systems and then re-entry and hypersonic vehicles. He covered increasing responsibility in all the manned compartment designed in Europe for the ISS (Columbus, MPCV, ATV) arriving to the full responsibility of the mechanical system for the CUPOLA segment.

In 2004 moved to the Advanced Projects Office as responsible of the space transportation and entry vehicles, charged with the R&D activities related to such vehicles, e.g. hot structures, nanotechnologies applied to space and health management systems. In 2006 member of the experts committee supporting the National Committee for the Bio-nanosecurity responding directly to the Italian Prime Minister. In the timeframe 2007-2010 he was member of the Finmeccanica's Community of materials in the role of champions of Thales Alenia Space for the nanotechnologies. In 2008 was appointed with the responsibility of nanotechnology products, establishing a laboratory dedicated to nanotechnology.

Since 2010 he's head of the engineering of Aviospace, Italian subsidiary of AIRBUS DEFENCE AND SPACE – Space Systems. In the actual role he's responsible of all the activities related to research, development, design and verification of space transportation and exploration systems.