

IAF BUSINESSES AND INNOVATION SYMPOSIUM (E6)
Public-Private Partnerships: Traditional and New Space Applications (2)

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ORBITAL DEBRIS: A GREAT BUSINESS OPPORTUNITY

Abstract

Since the beginning of the space age more than seventy years ago humanity has launched many thousands of satellites into orbit, and most of these are now inactive, dangerous wreckages, which pose an increasing risk of collision with other satellites and the operations of manned spacecrafts. When wreckages eventually collide, an unpredictable mass of smaller debris are produced, which greatly increase the general risk: any small fragment, traveling at orbital speed, can open holes in the hull of manned spacecrafts, causing quick depressurization. The above situation is now well known, and we hear many concerns about that, often associated to recommendations to start recovering, cleaning and claiming Earth orbit. However, we know that there is a similar general concern about pollution on Earth surface, sea, and air. We have witnessed things changing only where terrestrial wastes are processed and transformed in useful assets, such as fertilizers, building materials, energy. The problem in orbit is not different: until we will see orbital debris only as an expense of public money, it is quite unlikely that a real cleaning action will take off. The good news is that orbital debris – just like terrestrial wastes – are a value too. If collected, reprocessed and reused, space debris can mark the starting point of orbital industrial development. It is therefore very urgent to begin working on this issue in terms of feasibility, cost estimation, return of investment, i.e. business plan. Achieving a better analytical classification and terminology is key: it is evident that small debris, few millimeters large, pose quite different problems, respect big wreckages, from all points of view, collection techniques, stocking, processing, legal.