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A REVIEW OF DE-ORBIT TECHNIQUES FOR THE ADVANCEMENT OF ON-ORBIT
MANUFACTURING

Abstract

One of the critical areas which appears to impeded the advancement of on-orbit manufacture appears to be the ability to easily bring material back from orbit. While some of the problems were solved early in 1960s due to the impetus of the Cold War, these techniques may appear cumbersome for quick, frequent and inexpensive use. The cost per kg of downmass fom LEO may be a convenient Figure of Merit) to apply and contrast various proposals. In order to reduce this figure, elements from the nano-satellite community – involving technique and components – may be particularly attractive. Both propulsive and non-propulsive means are discussed, as well as the terminal re-entry and payload recovery. It will be shown that first generation, micro-gravity commercial ventures may be particularly accelerated by the rapid advancement of some of the techniques being contrasted and forwarded.