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SMALL SATELLITES AND REGULATION: A GENERAL OVERVIEW WITH A SPECIFIC
REFERENCE TO THE ITALIAN CONTEXT.

Abstract

The use of small satellites, especially in Low Earth Orbit, has been spreading rapidly in recent years: in fact, an increasing number of actors (public institutions, universities, research centers and private operators) often use these platforms for various purposes, such as for educational or scientific purposes as well as for commercial purposes. Therefore, there is a continuous growth in the annual launches of small satellites and, in confirmation of this, it is sufficient to consider that based on some analyses, in recent years their number increased more than twice as compared to some years ago. This phenomenon has many advantages, not least the fact that the use of these satellites has allowed new institutions and operators to undertake space activities. However, it may also involve some critical issues, such as the risk of overcrowding and congestion in some orbits or the risk of saturation of the frequency spectrum and / or interference in the use thereof. These critical issues can worsen if there is not a well-defined regulatory framework and the operators are not fully compliant with the legislation currently in force for space activities. In light of the above, this paper aims to investigate various aspects relating to the phenomenon of small satellites, both from a technical and a legal point of view. First of all, the concept of small satellites and their main applications will be addressed. Subsequently, some legal issues related to the launch and the operations of these objects will be analyzed, with particular reference to the authorization of such missions and the registration of these space objects, also considering the multiple launchings of small satellites and mega-constellations. In addition, a specific focus will be dedicated to the topic of space debris mitigation, especially in consideration of the technical peculiarities of small satellites. Finally, reference will be made to the initiatives undertaken in response to this phenomenon, at international and national level, with a focus on the Italian context.