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SMALL SATELLITES LEO CONSTELLATIONS: ADAPTATION OF THE REGULATORY REGIME  
AND DEVELOPMENT PERSPECTIVES

**Abstract**

While a single satellite can only cover a part of the Earth, a certain number of satellites, of a similar type and function under shared control, can cover either a larger part or all over our Planet. Satellite constellations have been already implemented in different orbits for use in navigation such as GPS or Glonass or in communication service proposed by the O3b. Because of several technical advantages, for instance the low latency from ground to satellite or the possibility of frequency reuse, the projects conducted by private actors for commercial activities of Low Earth Orbit ('LEO') satellite constellations don't cease to develop and expand. Cheaper and faster, the small satellites are perfect tools to realize these activities. For example OneWeb, which is a leading company in this sector, will launch almost 700 mini satellites in LEO to provide Internet connection, especially in the developing world. More projects, more actors and more small satellites would unfortunately lead to an increasing crowding in this key orbit that presents a challenge to space operations. Given the above reasons, the Kessler syndrome would likely happen before the end of the 21st century if the remediation measures are not taken in short order. Besides this risk related to the potential growth of the number of small satellites in LEO, we should also take account of the impacts of a collision between two small satellites, many legal questions arise; how to identify the launching state if the satellites are not registered? How to expect from the states to encourage the private actors if there is no liability transfer by a mandatory insurance requirement? How to avoid the bigger risks if only soft law provides end-of-life disposal rules? If the non-trackable small satellites should not be allowed? Small satellites no matter how small are subject to international space law treaties that do not respond to the need created by the growing trend of privatization and commercialization of LEO constellations. Primarily this second generation private activity oriented international rules need to be established and then states, by implementing them in national space legislations the most suitable way to balance between a stricter regulation and facilitating rules in order to ensure a regulatory certainty, can encourage the private actors. And we should keep in mind that any development in terms of technology requires an adaptation of the regulatory regime.