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Legal framework for collaborative space activities - New ways of launching (micro-launching) and large constellation microsats (Joint IAF/IISL session) (7-B3.8)

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THE PRINCIPLE OF NON-APPROPRIATION AND THE EXCLUSIVE USES OF LEO BY LARGE  
SATELLITE CONSTELLATION

**Abstract**

New projects of large satellite constellations, in another words mega-constellations, are challenging the established business models of satellite telecommunication industry. Targeting the Low Earth Orbit (LEO), already the most populated orbit for space applications such as Earth observation and telecommunication, these constellations pose an increasing risk regarding the generation of space debris, critical issue in the use of LEO. According to the IADC (Inter-Agency Space Debris Coordination Committee), presenting at the Scientific and Technical Subcommittee of the UN COPUOS in 2018, the implementation level of the IADC Space Debris Mitigation Guidelines in LEO is considered as “insufficient and no apparent trend towards a better implementation is observed”, compared with GEO. In parallel, 11 private entities such as OneWeb, Telesat and SpaceX obtained approval from the U.S. Federal Communications Commission (FCC) to initiate large satellite constellation projects. Since 2016, the FCC approved the following applications: OneWeb for 720 LEO satellites, Telesat Canada for 117 LEO satellites, and Space Norway for two highly elliptical arctic-focused satellites. SpaceX is about to obtain the approval to start its plan for a broadband network of 4425 satellites.

Before those massive numbers of satellites to be launched into LEO, several legal issues have been identified from the perspectives of international obligations related to liability and registration under the Outer Space Treaty of 1967 (OST), the Liability Convention of 1972, and the Registration Convention of 1975. Taking them into consideration, as well as IADC statement on large satellite constellations, the present article reviews one of the most fundamental principles in space law, the principle of non-appropriation, to clarify its applicability to the use of LEO by large satellite constellation. As Article II of the OST stipulates that “outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”, the exclusive use of specific orbits by large satellite constellations needs to be examined whether or not it would violate the non-appropriation principle. After this clarification, the paper concludes with proposals for possible solutions.