IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
IISL Young Scholars session and Dr. Jasentuliyana Keynote lecture by a leading space law expert (1)

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PROTECTING THE DARK SKIES OF THE EARTH FROM SATELLITE CONSTELLATIONS UNDER INTERNATIONAL SPACE LAW

Abstract

Satellite Constellations are network of satellites that function together simultaneously to offer permanent global coverage, Navigation, High Band width internet connectivity or ensure Internet access to remote places on the Earth. The Satellite constellations are generally small, large in number and are preferably operated closer to earth in Low Earth Orbit/Medium Earth Orbit to provide faster connectivity. Considering these incentives, both Space Faring countries and Private Organizations are geared up to launch more of such Satellite Constellations in the near future. However these Satellite Constellations are far brighter and visible in the night sky than other satellites and therefore a rapid increase in the number of Satellite constellation in the Earth's orbit threatens the natural dark skies of the earth.

The bright trails of these satellite constellation on the Dark skies in large numbers can interfere with Astronomical Observations, Earth based Telescopes and can even potentially hinder Space Situational Awareness. To protect the night skies of Earth from these bright and innumerable satellite constellations, this paper will discuss the legal measures available under International Space law.

Firstly, this paper will emphasize how the extension of the *"Equitable Access principle"* under Article 44 of the ITU Constitution to Low Earth Orbits and Medium Earth Orbits will help in regulating the number of Satellite Constellations operating in such orbits thereby potentially reducing the disturbances caused to Dark skies of the earth .

Secondly, this paper will analyze how *"Milestones based launching"* of Satellite constellations as agreed under WRC 2019 will help in reducing simultaneous launches of numerous Satellites part of the constellation thereby offering time for previously launched satellites of the constellation to reach far away from Earth and pose less threat to the Dark Skies.

Thirdly, this paper will analyze the importance of a comprehensive licensing policy by National Agencies such as Federal Communication Commission of U.S etc. with regards to Satellite Constellations to consider the potential environmental impact caused by these Satellites in the Dark Skies and thereby prevent its pollution.

Finally considering that Outer Space activities are governed in accordance with International law under Article III of the Outer Space Treaty 1967, this paper will evaluate the applicability of World Heritage Convention 1972 to protect Dark Skies of the Earth and thereby obligate the majority of space faring countries that are parties to this convention to refrain from its pollution.