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ADDRESSING THE ELEPHANT IN THE ORBIT: SEEKING NORMS AND INTERNATIONAL COORDINATION FOR INCREASED TRAFFIC IN LEO

Abstract

Since the beginning of the Space Age, governments and private actors have developed technology that would allow humankind to explore and utilize outer space to the greater benefit of life back on Earth. Growth was relatively steady for decades, but recent years have seen an explosion in the number of launches and objects launched. This growth culminated in the placement of a record-breaking number of satellites in orbit in 2020. This increase shows a trend that is led by private space companies aiming at leveraging outer space services such as remote sensing imagery, communications, navigation, space situational awareness, weather data, etc. In order to achieve this, operators require large satellite constellations in orbit. While such an infrastructure in space is fundamental in providing uninterrupted communication across the globe - it does not come without serious risks to the usability and operability of LEO. These activities raise important questions about ensuring the sustainability of outer space activities, notably whether the unrestrained pursuit of self-interests in LEO will lead to a "tragedy of the commons". Some of the most imminent issues are: satellite collisions, increase in space debris, frequency spectrum interference and even the deposition of high masses of aluminium into Earth's upper atmosphere. The international community does not have technical solutions nor a robust governing legal regime that regulates these problems, yet frequencies continue to be allocated on an international level and licenses are being granted by national authorities for constellations. Taking all of this into account, this paper aims to address the following questions:

Adequacy of international organizations to deal with this type of massive fillings and what consequences does that have? In terms of practical effect, how much do mega-filings actually interfere with other space plans? Does this make the "Mega-filer" an "arbitrator" for applied shells? What effects on the commercial sector will the practice of applying for an abundance of shells and then just canceling the redundant ones have? What is the role of national authorities to ensure that the principles of the UN Outer Space Treaties are still the guiding norms? What is the responsibility of private actors in ensuring the sustainability and operability of orbits and are they the ones setting norms of behavior (both in positive and negative sense)?

This paper will conclude with a set of recommendations for all the relevant actors – international organizations, national licensing authorities and private players.