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GETTING RIGHT-OF-WAY RIGHT IN LOW EARTH ORBIT – AN (ASTRO)NAUTICAL CONUNDRUM

Abstract

Human kind is active in Low Earth Orbit (LEO) as never before and the number of satellites launched per year is rapidly climbing. Mega-constellations, space stations and other ambitious projects are being planned by private and public players from all around the globe and signify a future orbital domain with a much higher population. Congestion, conjunctions and risk of collisions will be issues that the international space community will have to solve to ensure sustainable use and access to LEO. The Outer Space Treaties have been instrumental in creating common and global legal principles for outer space, but new issues have arisen since their adoption, and they start to show their age. They were designed at the dawn of the space age and set out important general principles for a new and barren domain. LEO is no longer as barren and the space community needs specific rules to guide interactions; we need *Rules-of-the-Road*.

Tensions over conjunctions and collisions risk, between both commercial actors and between nation states, underscores the urgency of agreeing basic Rules-of-the-Road norms, such as for Right-of-Way to avoid catastrophic collisions and escalations. The current body of international law does not provide any clarity for operators when determining who has priority and who should maneuver in conjunction scenarios. In contrast, international Law of the Sea offers clear and globally accepted norms for priority, Right-of-Way and obligations to maneuver for seafaring vessels. On the sea, Right-of-Way is determined based on different parameters, such as *inter alia* type of propulsion (powered vessels gives way to sail), relative position (vessels to the stern have priority).

What are the relevant parameters to decide priority for vessels in orbital space? Although the feasibility of various parameters in deciding priority in orbit is (at least) as much a technical question as a legal one, the regulatory perspectives should not be underestimated. References to relevant technical literature will be made where appropriate. This paper analyses the transferability of the basic parameters used in nautical navigation from a primarily regulatory perspective. The paper complements the analysis of parameters gleaned from nautical law with examples of nascent Right-of-Way norms extracted from standards and technical guidelines such as *"NASA Spacecraft Conjunction Assessment and Collision Avoidance Best Practices Handbook"*. Finally, the paper expounds on the hidden questions of equity and access buried in the question of Right-of-Way norms.