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POLICY CONSIDERATIONS AND RECOMMENDATIONS FOR SPACE TRAFFIC MANAGEMENT OF LOW LUNAR ORBIT

Abstract

The number of artificial objects in space has grown exponentially in the last decade, encouraging a greater focus on space safety and sustainability. Much of this focus is on the detection, tracking, cataloguing, and coordination of objects in space, also known as Space Traffic Management. Beyond geosynchronous orbit, the Artemis mission brings a renewed excitement for lunar operations, and many countries plan to send missions to the moon in the coming decade. It will be imperative to protect these assets and the lives of the humans on the surface of the Moon and in Lunar orbit. Just one collision could be catastrophic to Lunar missions and diminish support from the general public. The current system of Space Traffic Management around Earth is a reactionary solution to accidental and intentional collisions that left debris clouds to endanger satellites in nearby orbits. This paper serves to promote proactive solutions to Space Traffic Management of Low Lunar Orbit by discussing five main policy questions: How will satellites be discarded? What should be done with defunct satellites? Who should move in the event of a potential collision? How should satellites be tracked? Who would be the governing body of a lunar STM system, and who would fund it? For each of these questions, the current solution used around Earth is given, followed by a discussion of the possible solutions that could be implemented in Low Lunar Orbit. The paper concludes with final recommendations on a set of norms and policies to be implemented to promote safety and sustainability of Low Lunar Orbit.