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ICAO PRINCIPLES FOR A SAFE, SECURE, AND SUSTAINABLE SPACE ENVIRONMENT

Abstract

Space technology provides countless terrestrial benefits and is ubiquitous in modern society. However, increasing orbital congestion threatens the reaping of those benefits and highlights the importance of establishing a safe, secure, and sustainable operating environment with novel international regulatory concepts.This paper incorporates United Nations (UN) International Civil Aviation Organization (ICAO) principles into a hypothetical specialized UN agency designed to promulgate technical standards for in-orbit servicing activity, safety, and security. More specifically, ICAO's two-tier system is outlined, which uses regulatory incentives to enact and enforce standardization. The result is a self-regulating entity that decreases ambiguity around best practices related to safe and sustainable spaceflight, harmful interference, and space activities more broadly. The chosen methodology consists of dissecting ICAO's structure (membership, jurisdiction, enforcement, etc.) and those elements most applicable to a regulatory analog for space activities, while identifying associated hurdles and proposed adoption procedures. While the recommendations given are not a definitive solution to industry woes surrounding the assurance of a safe, secure, and sustainable space environment, the ICAO model modified by space law principles can aid in the international policy-making process, defining future space traffic management and the ethical use of the orbital environment.