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Up, up and away: Future legal regimes for long-term presence in space (2)

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SPACE TRAFFIC MANAGEMENT OPTIONS

Abstract

With the threat of increased collisions and electromagnetic interference, exacerbated by several recent debris-generating events, notably the collision between the operational Iridium 33 and dead Cosmos 2251 satellites, some suggest there is an immediate need for a “space traffic management.” Developing such a system to manage on-orbit space activities would embody the objectives of three principles of Article IX (cooperation, mutual assistance, and due regard) and the affirmative duty to consult. This paper will highlight the global space sustainment interests and evolving standards for business rules used during space operations, and then use these to put forth criteria for evaluating space traffic management proposals. It will investigate space traffic management architecture options and apply common sense criteria to determine which have the greatest merit for the global spacefaring community. Five approaches to reduce collisions and electromagnetic interference, and mitigate space debris challenges, will be examined, scored, and arguments for and against each presented. In addition, this analysis will assess whether a space traffic management regime that incorporates privately performed regulatory mechanisms, instead of governmental schemes, could provide more flexible, responsive, and evolutionary processes; and whether this, in turn, could reduce space operator regulatory compliance costs.