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Strategic Risk Management for Successful Space & Defence Programmes (4)

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RISK MANAGEMENT STRATEGIES AMONG SPACE OPERATORS

Abstract

This paper examines how satellite owners and operators (O/Os) and launch service providers (LSPs) address risk by examining primarily non-engineering solutions they can deploy to mitigate risk. Such actions can include procuring insurance, using state-of-the-art commercial space situational awareness (SSA) services, having extra satellites as redundancy in their satellite systems, or contracting for in-orbit servicing. We examine the range of actions available to O/Os and LSPs, and the financial impacts of these actions. We also look into how these actions vary by the size and sophistication of the organization, mission type (e.g., commercial, civil, national security), and availability and maturity of the solutions. We will also look for differences in approach by orbital regime, including LEO, GEO, deep space, and others, and by country or region. We will discern why some operators accept more risk than others, and the impacts – financial, operational, and otherwise – of those choices. Risk management involves identifying risks, assessing their impact, and treating them. Assessment involves determining the cost of reducing the probability of loss, the consequences of loss, or both, while treatment involves the selection of solutions, e.g., avoidance, reduction, retention, or transfer, based on their costs and benefits. We note the vast differences in risk tolerance between entrepreneurial space companies and large, legacy organizations, as well as among the startup space companies based on their capital structure and amount of capital raised. Our conclusions will provide guidance for space companies, ranking the solutions based on measures such as effectiveness, maturity, and cost, as they consider their risk appetite and their resilience to the hazards of space activity.