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SPACE STRATEGIES FOR EMERGING ACTORS -  
A PORTFOLIO-BASED APPROACH

**Abstract**

Today, nations around the globe face a choice: become a space power or become obsolete. To help answering this challenge, I present a novel approach for space strategy development: the Portfolio Optimisation-Augmented Strategies (PortAS) framework. The PortAS framework formulates the space strategy as a Systems of Systems architecture with every planned initiative or large-scale physical system defined as a "strategy system". The strategy is then interpreted as a portfolio and optimised using mean-variance portfolio optimisation. In the framework, the return of each strategy system is defined as potential gains in technological capacity and autonomy for the country as a space power (based on a framework for measuring space power by Aliberti et al.), and the risk covariance matrix is derived from a Design Structure Matrix, mapping programmatic and schedule interactions between strategy systems. I demonstrate the use of the framework through developing an example strategy for an emerging space actor.