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UNLOCKING SPACE: DESIGNING A DEDICATED LAUNCHER FOR SMALL SATELLITE MISSIONS

Abstract

In recent years, the proliferation and deployment of small satellites into orbit have surged, driven by a growing global interest in space exploration, particularly among developing nations. Small satellites offer a cost-effective entry point into space missions, making them an attractive option for countries seeking to venture into space but facing budgetary constraints. However, a significant challenge arises because small satellites are often relegated to secondary payloads on launch vehicles, with their orbits dictated by the primary payload. This limitation can constrain mission design and operational flexibility for small satellite missions. To address this issue, the authors propose the development of a dedicated launcher tailored to small satellites. By prioritizing small satellites as the primary payload, this launcher aims to offer a more tailored and cost-effective solution for nanosatellite missions without compromising launch port selection. The proposed launcher design represents a strategic initiative to enhance the accessibility and versatility of small satellite missions, ultimately fostering innovation and exploration in the space domain. Securing funding and collaboration with key stakeholders, such as the Peruvian Space Agency (CONIDA), will be crucial to realizing the prototype and initiating test flights, marking a significant step towards advancing small satellite capabilities and expanding opportunities in space exploration, taking into account the future spaceport in Peru too.