SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Small Launchers: concepts and operations (7)

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NEW OPPORTUNITIES FOR SMALL SATELLITE LAUNCH VEHICLES

Abstract

This paper will provide an overview of the current and future opportunities on the nanosatellite and small satellite launch market. It will discuss the practical goals and challenges of an international launch service, the opportunities and challenges in creating a worldwide small satellite launch 'pool' and the current launch opportunities to low earth orbit, geosynchronous transfer orbit and lunar orbit.

With the significant increase in small satellite activities and projects in Europe, the US, Asia, and other parts of the world, the availability of regular, affordable access to space for small satellites becomes even more critical than before. Obviously, there are many complicating factors in 'arranging a ride' for small satellite. These can be technical and programmatic mismatches between the available launch opportunity and the small satellite mission objectives and planning. But (more) often these complicating factors also relate to export restrictions, political considerations, lack of standardization or a mismatch in requirements and expectations between the small satellite developer and the launch provider or primary customer.

Considering the number of rocket launches per year, one might expect sufficient excess capacity on board these launch vehicles to easily accommodate a significant number of small satellites as auxiliary or piggyback payloads; In practice it is actually quite difficult to find an available, affordable launch opportunity for a small satellite.

This paper will discuss how ISIS can enable small and nanosatellite developers to buy a 'ticket to space' for their mission. In addition, this paper will discuss some new technical developments that enable this 'ticket to space' and allow more nanosatellites to be launched on the same vehicle. These modular payload decks are currently under development and allow tens of nanosatellites to be clustered into the volume of a traditional small satellite as secondary payload on a big launcher or primary payload on a nanosatellite dedicated small launcher.