

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
Small Launchers: Concepts and Operations (7)

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LS-1: A NEW SMALL LAUNCHER DEDICATED TO MICRO/NANO SATELLITE MISSIONS

**Abstract**

LandSpace Technology Ltd is an emerging SMEs in private and commercial sector in China dedicated to the RD of small launchers to provide dedicated services for micro/nano satellite missions. The first small launcher currently under development in LandSpace is named as LS-1, which is designed to provide launch services for micro/nano satellite missions worldwide. It is a four stage small rocket, with a capacity of launching 300kg payloads into an LEO SSO at 500km, priced under USD 7 million. It is a four stage small rocket, with a total length of 20m, a total launch mass of 32 ton. The first three stages are using solid rocket engines derived from matured Chinese technologies with a diameter of 1.4m, while the fourth stage is a small liquid engine to provide accurate orbit entry with capabilities of multiple firings, such as to meet for satellite in-orbit deployment or multiple orbit transfer. The system configuration of this newly designed small launcher differs from traditional Chinese launchers in the integrated system design of the on-board electric and avionic system, which is highly integrated for both on-board systems and ground telemetry/tele-command systems. It will be a mobile hot launch shot during the launch campaign, where all AIT tasks shall be well performed before check-out, while on the launch site, only simple test process is needed for final preparation. This paper will discuss this new Chinese small launcher development, including its system configuration, design, capacity consideration, and engineering implementation, as well as consideration for a launch campaign.