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

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THE VLM-1 LAUNCH SYSTEM CONCEPT

Abstract

The Institute of Aeronautics and Space (IAE) under sponsoring of the Brazilian Space Agency (AEB) is developing a new launch system called Microsatellite Launch Vehicle (VLM-1). The German Aerospace Center (DLR) is participating on the program with the aim to create the conditions to launch the German reentry experiment SHEFEX-3. Brazilian interest is to create the conditions to develop a launch system that is capable to put microsatellites on Low Earth Orbit (LEO). The main VLM-1 version is composed of three stages of solid propellant motors based on composite materials technology. Other versions will include also an orbital raiser to accomplish more demanding missions. The VLM-1 vehicle is being developed under a design-to-cost approach to allow a low cost option for micro, nano and picosatellites. This paper describes the missions the vehicle shall accomplish and the main concept of the different launcher versions with the expected payload capabilities.