

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Services, Missions, Operations, and Facilities (2)

Author: Ms. Tori Campbell
University of Cape Town, South Africa, cmpvic003@myuct.ac.za

Dr. Peter Martinez
University of Cape Town, South Africa, peter.martinez@uct.ac.za

Dr. Rene Laufer
Baylor University / University of Cape Town, United States, rene.laufer@me.com

INVESTIGATION OF FEASIBLE OPTIONS FOR DEVELOPING A MICRO-LAUNCHER INDUSTRY
IN SOUTH AFRICA

Abstract

Small satellites have dramatically lowered the barriers to participating in space activities for many developing and emerging countries. However, affordable and fast access to space remains a challenge despite a large number of planned micro-launchers by new space start-ups as well as established launch providers. Most of the current spaceports in the world are located in the northern hemisphere, and there are currently no operational spaceports in Africa.

As part of an on-going study at the University of Cape Town's SpaceLab this paper presents a status of the investigation and its initial results. In this study the potential for developing a micro-launcher industry in southern Africa is explored, building on the launch facilities established for the previous space programme of the 1980s and early 1990s, and existing capabilities in present-day academic institutions and industry. Potential markets, technical feasibility and available infrastructure, regulatory and policy aspects of such a venture are reviewed and several possible options for establishing a small-sat launch capability in Africa are investigated, ranging from a simple "ship and shoot" scenario with no indigenously developed technology, to more complex cooperative arrangements with several levels of technology development with potential international partners.