

NASA SBIR/STTR Technologies

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PI: Markus Rufer

Firm Name: Microcosm, Inc., Hawthorne, CA



Identification and Significance of Innovation

The UCPS is an all-composite pressurized structure that incorporates a positive expulsion device (bladder) that is Hydrazine and HAN (M-315) green propellant compatible. This design combines manufacturing simplifications and cost reduction methods that yield an ultra low parts count and eliminates the need for secondary structure. Low mass, high structural stiffness, large performance margins, low thermal effects sensitivity, high shock and vibration tolerance and extreme operating agility are some of its outstanding features.

TRL Level 6



Technical Objectives and Work Plan

Design, build and validate an all-composite pressurized structure with an integrated, pressurized bladder system to achieve a robust fuel storage and expulsion system for space based applications

- * Preliminary System Definition
- * Build a Test Tank with PED Bladder
- * Test bladder function and efficiency evaluation
- * Materials Compatibility testing
- * Combined Systems Engineering

NASA and Non-NASA Applications

NASA applications:

Fuel storage and expulsion for space based applications (Satellites, propulsion systems, steering systems, orbit control)

Non-NASA applications:

Launch vehicle upper stages, commercial spacecraft bus, UAV

Firm Contacts

Technical: Markus Rufer
Microcosm Inc.
Phone: 310 219 2700

Administrative/Contracting: Judy Masukawa
4940 W. 147th St. Hawthorne, CA 90250
E-mail: mrufer@smad.com; judym@smad.com

NON-PROPRIETARY DATA