



NASA SBIR 2011 Phase I Solicitation

X5.01 Expandable Structures

Lead Center: LaRC

Participating Center(s): JSC

The SBIR subtopic area of Lightweight Inflatable Structures solicits innovative concepts to support the development of primary pressurized expandable habitat and storage modules for space exploration environments. Inflatable concepts should illustrate small efficient launch volumes and large deployment volumes. Concepts should also illustrate simple designs, efficient deployment techniques, lightweight materials, and potential for integrated hard points. Robustness, damage tolerance, and minor repair capabilities should also be considered in concept submittals. Airlock and window integration into the inflatable should also be considered.

Lightweight secondary structures for internal outfitting of the inflatable structure after deployment are also solicited. Lightweight concepts of interest include walkways, storage facilities, and hard points for utility or operational subsystems. Secondary structures should be packing and mass efficient, stiff-post deployment, redundant, modular, and multi-functional.

Research should be conducted to demonstrate technical feasibility during Phase I and show a path toward a Phase II hardware demonstration, and when possible, deliver a demonstration unit for functional and environmental testing at the completion of a Phase II contract.