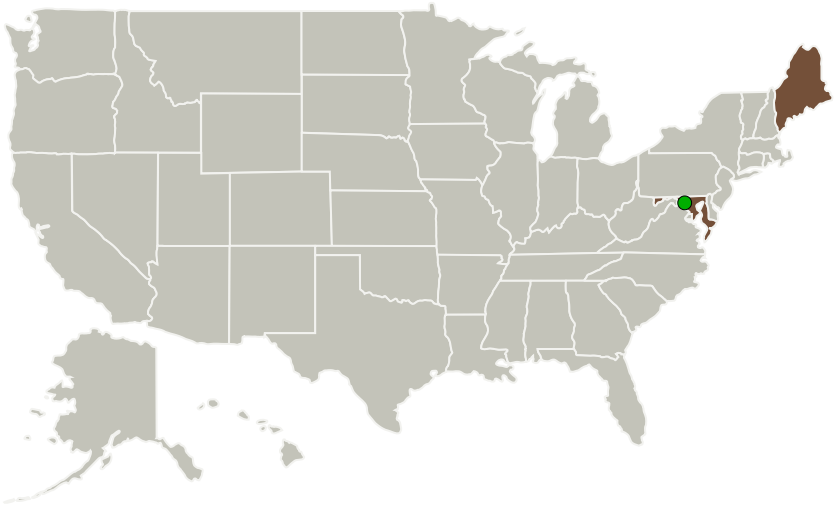
Airfoil Controlled Glide and Directional Control, Phase I

Completed Technology Project (2016 - 2016)

Project Introduction

There is a growing desire for recovery systems that provide extended cross range capability and are steerable to enable precision landing of payloads. Using a recovery system that enables landings to specific coordinates can dramatically reduce suborbital flight recovery costs, future space return flight costs in the Earth's atmosphere. It also has potential in the Mars' atmosphere where a lightweight, low volume flight system such as a parafoil can increase the range of motion across the planet with increased lift or reduced drag. A fabric ram air canopy can be dramatically lighter weight than a foldable composite system while still being able to provide long range glide and descent rate control. Wizbe Innovations has developed a unique, lightweight fabric system to control airflow in textile based ram air canopies.Controlling the airflow provides glide and directional control to improve steering, potentially increase lift, and potentially reduce opening shock. Another potential advantage to moving the controls into the canopy is that it reduces field logistics by reducing retrieval to only the parachute canopy. Wizbe's controls are located within the parachute and have no winches, pulleys and wires outside the canopy.

Primary U.S. Work Locations and Key Partners



Airfoil Controlled Glide and Directional Control, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Airfoil Controlled Glide and Directional Control, Phase I

Completed Technology Project (2016 - 2016)

Organizations Performing Work	Role	Type	Location
Wizbe Innovations, LLC	Lead Organization	Industry	Manchester, Maine
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maine	Maryland

Project Transitions

June 2016: Project Start

December 2016: Closed out

Closeout Documentation:
- Final Summary Chart*(https://techport.nasa.gov/file/139628)*

Images

Briefing Chart Image
Airfoil Controlled Glide and Directional Control, Phase I
(https://techport.nasa.gov/image/132805)

Final Summary Chart Image
Airfoil Controlled Glide and Directional Control, Phase I Project Image
(https://techport.nasa.gov/image/132278)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Wizbe Innovations, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

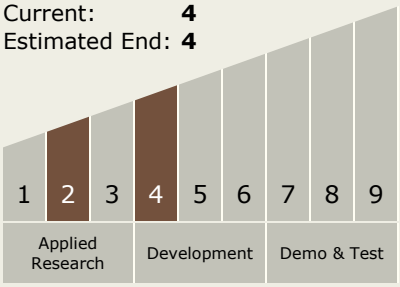
Carlos Torrez

Principal Investigator:

Stan Farrell

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  └ TX09.2 Descent
    └ TX09.2.1 Aerodynamic Decelerators

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System