



Deployable Rigid Adjustable Guided Final Landing Approach Pinions (DRAG FLAPs)

Problem Statement

- SOA descent technology requires major advances as planetary missions demand larger payloads with an emphasis on precision landing
- Using DRAG FLAPs, Masten Space Systems can achieve higher altitudes, engine off descent, and precision landing.
- Users include Masten, NASA (ISS Sample Return, Planetary Science Missions), DoD, Emerging Commercial Entities

Technology Development Team

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Proposed Flight Experiment

Experiment Readiness:

- Spring 2013

Test Vehicles:

- Near Space Corporation - SBS

Test Environment:

- Previously unflown
- Masten requests scale model drop tests from 35km MSL

Test Apparatus Description:

- A scale model derived from the previous work will be constructed. The scale model will operate autonomously once it is powered on. Shown below are a CAD model, CFD results, and a full size test article.



Technology Maturation

- Maturation through multiple flights of increasing sophistication
- Demonstration of flap deployment, flap actuation, and active steering and guidance in relevant environment raises TRL
- Presently, there is no technology maturation deadline

Objective of Proposed Experiment

- Primary objective is to collect flight data for multiple flap positions
- Flight data includes position of flaps, and test article's position, velocity, and acceleration
- Flight data will be used to tune control algorithm parameters to improve in flight stability and control.