SATLASS Cold Gas Propulsion System and Nozzle Geometry Study

ERORA

Introduction

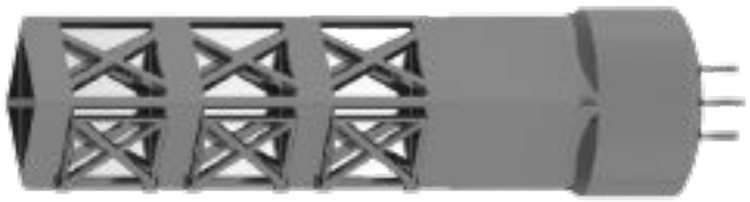
- First CubeSat deployer capable of deploying at multiple orbits.
- Features a cold-gas thruster system.
- Can deploy up to 3 1U CubeSats.
- CubeSats are miniature satellites composed of Units (U's).
  - 1U measures approximately 10x10x10 cm.

ERORA Executive Officers

President: Jackson Lamb | **Vice President**: JT Lozano

SATLASS Lead: Anthony Todisco Jr. & Anirudh Aggarwal

Club Advisor: Professor Sean Crouse

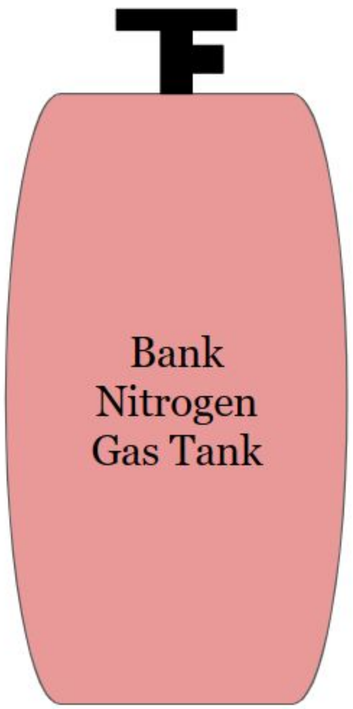


Satellite Autonomous Launch and Assembly Structure

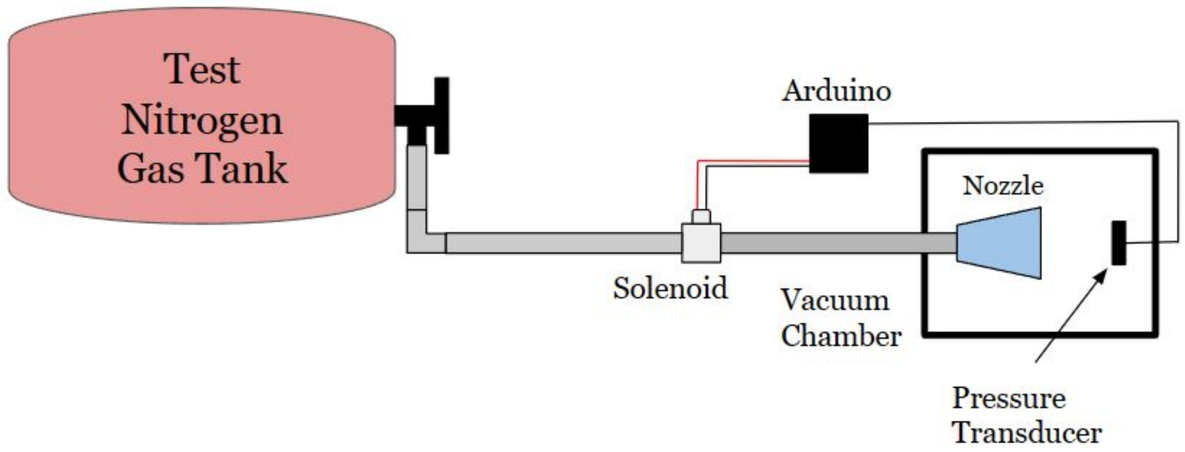
Furure Endeavours

- CFD and further stress testing on all nozzle geometries and propulsion system.
- Manufacturing and material analysis for nozzles.
- Manufacturing and testing of propulsion system.
- Finalizing structure development.

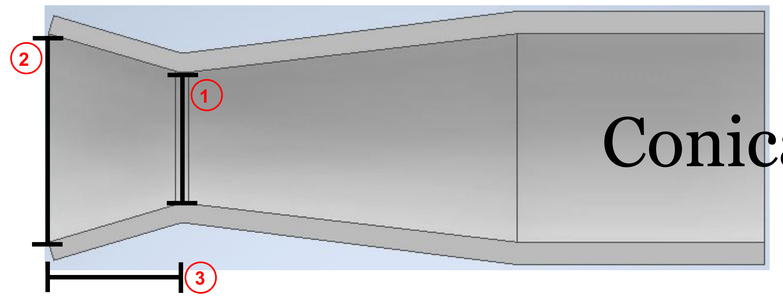
Cold Gas Test Propulsion System



- Nitrogen will be used as the main propellant.
- Vacuum chamber will be used to simulate orbit conditions.
- Pressure Transducer and Solenoid will be used remotely start and end the test while collecting the outputted thrust.



Nozzle Geometry



① D_{throat} = 0.8723cm

② D_{exit} = 1.4 cm

③ L_{nozzle} = 0.8953 cm