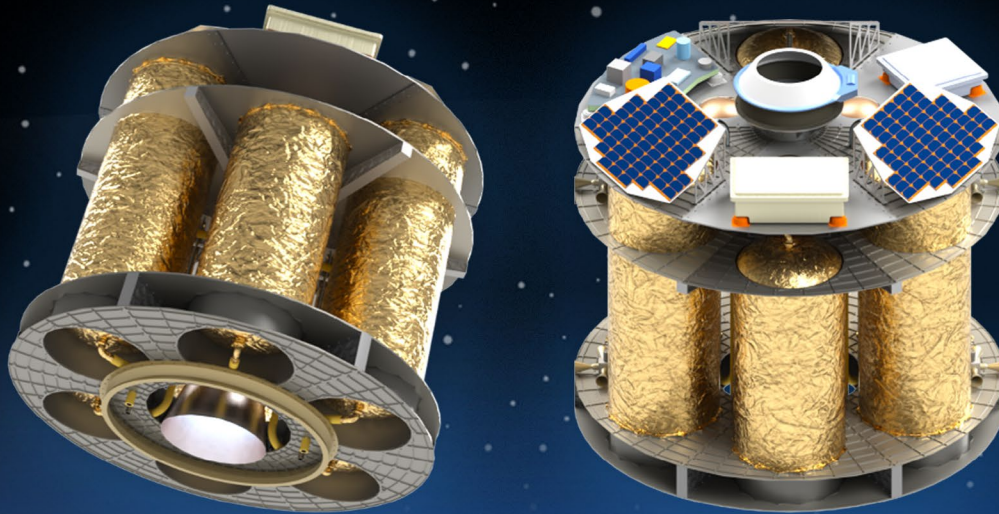




NEW FRONTIER
AEROSPACE



Bifröst - high-Performance Cryogenic Orbit Transfer Stage (OTS)

Bifröst is an orbital transfer spacecraft powered by NFA's 3D printed, full-flow staged combustion, LOX/LNG Mjöltnir engine - and optimized for small satellites and NASA "Venture Class" launch vehicles.

From low Earth orbit, a 3,000 lb. gross weight Bifröst enables rapid Hohmann transfers of:

- 400 lb. payloads to geostationary orbit;
- 200 lbs. to any location in cislunar space; or
- 110 lbs. to Venus transfer, Mars transfer or Earth escape velocity.

Key benefits

The high-performance engine enables the design of a small and lightweight OTS due to its performance and the high bulk density of LOX/LNG fuel, which is over twice that of LOX/LH2 fuels. This level of performance and dense propellants allow for the delivery of a reliable, long-life, light-weight, and low-cost OTS with key performance parameters:

- Powered by a high performance full-flow staged combustion engine
- Higher thrust and Delta v than the competition
- Throttleable thrust from 30% to 100%
- Autogenous pressurization with unlimited zero-g restarts
- Access to all Earth, Lunar and cislunar orbits
- Faster transfers to the libration points
- Proprietary zero-boiloff technology

Applications

NASA

Bifröst has the potential to evolve from a transfer stage into a lunar lander - and ultimately a refuelable and fully re-usable OTS. From LEO a 3,000 lb gross OTS can deploy a 400 lb payload to GEO and over 200 lbs to any location in cislunar space, including Earth escape velocity.

For more information go to the [NASA Tech Portal](#).

Military

A 3,000 lb OTS enables responsive military access throughout cislunar space for space domain awareness and other missions.

Commercial

- Bifröst has a small form factor optimized for launch inside the fairing of venture class vehicles.

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