

MISSION NEED

For many years, humanity has dreamt of exploring space and other worlds. One of the challenges of building a Mars colony is the means of bringing humans to the Martian surface and back. Charon is a rocket providing continuous, reliable and sustainable transportation between the Martian surface and an orbital node.

CAPSULE

- Space for 6 people and cargo
- 7 sols of life support
- Communication at all times
- 2 Hydrogen fuel cells

CHASSIS

- Carries all loads, houses the tanks
- Chassis fully reproducible on Mars

ENGINES

- 9 LOX-liquid methane engines
- Gimbaled control
- 310kN of thrust per engine

ABORT

- Explosive bolts
- 6 hypergolic abort engines
- Drogue and main parachutes

LEGS

- 4 legs, for support at all times

CONTROL

- 33 RCS thrusters
- 6 DOF control
- Body flap for reentry roll and pitch control

GROUND

- Sulfur concrete launchpads
- Propellant produced on Mars
- Parts producible in-situ

MISSION PROFILE

Ascent
6 minutes

Phasing
2 sols

Rendez-vous
200 minutes

Insertion
40 minutes

Reentry
13 minutes

Landing

Launch