**CLPS SMALL LUNAR LANDER (SLL)**

**Simple Design**
- **Monopropellant Design:** Simplicity and reliability of monopropellant propulsion system and flight proven engines minimizes development risks
- **Propellant Tank Expertise:** Propellant tank provided by Northrop Grumman ATK - world leader in space propellant tanks, based on heritage tank design, with a PMD design provided by world renowned PMD design to provide continuous propellant supply through coast and landing operations
- **Blowdown Simplicity:** Monopropellant operations in blowdown, while augmented with a single operation pressurant system for ease of operation and reliability
- **Proven Propulsion System Integrator:** Aerojet Rocketdyne has integrated over 270 spacecraft propulsion systems
- **Functional Structural Design:** Simplified component and payload deck allowing ease of integration and tailored inserts for custom payload needs

**Proven Components**
- **Payload Volumes:** Dedicated Payload Processors and 0.5m³ of volume ease payload integration and deck configurability from mission to mission
- **Polar Region Power Collection:** 2.0 m² of solar array area tailored for power collection in polar regions
- **Landing Stabilization:** Landing legs (fixed) and deployable outrigger legs designed to support landing loads even if deployment fails
- **Lightweight Avionics:** DSS designed NASA Orion heritage CRIT-1 vision navigation processor and tailored microcontrollers with rapid reboot capability, payload flexibility, and ease of prototyping

**Mission Success**

**Compact Design:**
- Lander fits within ESPA Grande Launch Volume, standard ground and air freight shipping containers and forklift pallets.

**State-of-the-Art Camera System:**
- DSS provided camera system is based on the NASA Orion Spacecraft camera system for vision navigation and general imagery.

**Experienced Integrators:**
- DSS and Spaceflight Industries have decades of expertise in general payload and secondary payload to Launch Vehicle integration
- DSS personnel have performed key system integration leadership roles on many NASA and other space missions

**Interplanetary Mission Operations Expertise:**
- Our experienced mission operations team (SEE, DSS, ASI) have flown numerous space missions, including Mars and Lunar lander missions.

**Existing Software Infrastructure:**
- ASI provided MAX flight software (currently flying on 26 missions) for vehicle software, ground software, and payload commanding

**Launch Vehicle Flexibility:**
- ESPA Grande class maximizes launch options while minimizing launch costs.