

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)  
Commercial Human Spaceflight Programmes (2)Author: Dr. Forrest Meyen  
United StatesLUNAR OUTPOST COMMERCIAL LUNAR MOBILITY SERVICES FOR HUMAN LUNAR SURFACE  
EXPLORATION**Abstract**

The Lunar Dawn Lunar Terrain Vehicle (LTV) is a commercially developed and operated lunar mobility platform created by Lunar Outpost in partnership with Lockheed Martin, General Motors, MDA, and Goodyear. The vehicle design benefits from the team's agile New Space expertise, proven human space heritage and automotive industry strengths. This commercial lunar mobility platform has capabilities exceeding NASA's requirements for Lunar Terrain Vehicle Services (LTVS) for the NASA Artemis program. Lunar Outpost will own and operate the Lunar Dawn LTV to provide enhanced mobility to the NASA Artemis Astronauts and utilize the vehicle to provide commercial services to lunar economy customers.

The vehicle features intuitive crew interfaces, human-rated software, autonomous navigation, and a precise robotic arm. It will also provide the capabilities needed for robust and diverse commercial use, including a reconfigurable cargo bed that utilizes a universal payload interface to allow for seamless changing of payloads. A key feature of the Lunar Dawn LTV is its ability to not only survive the lunar night but operate on the surface of the Moon throughout that prolonged period of darkness – this novel technology significantly extends the mission life and scientific return value. This paper describes the enabling features of the system that will extend the reach of human exploration on the surface of the Moon and enable new lunar business cases. The Lunar Dawn LTV will provide a true off-road vehicle for astronauts to utilize and will enable the creation of critical infrastructure for a sustainable presence in space where humans can live, work, and create value.