



Abstract #833

English

Commercialization of Lunar Rover Prototypes

In 2008, Ontario Drive and Gear began developing lunar rover prototypes with several partner companies such as NORCAT (Deltion), Neptec, and Xyphos. The first prototype, known as JUNO rover, was designed and built in response to the Canadian Space Agencies interest in pursuing lunar and Martian mobility platform development. Unlike many planetary rover prototypes, the JUNO was designed to be a relatively low cost and robust vehicle that would be able to be adapted to a multitude of ISRU and exploratory activities and payloads. It is a four wheeled rover with a differentially linked walking beam suspension and skid-steering directional control. The rover was designed to be compatible with both tracks and wheels, thereby providing a platform well suited to evaluating these technologies. Extensive testing was performed at several different analogue sites, including Sudbury and Hawaii as well as rock-yard test facilities at both Johnson Space Center in Houston and the Canadian Space Agency in Montreal. The first generation of the JUNO Rover was built between 2008 and 2010; ten units were built in total. In 2011, most of the JUNO Rovers were upgraded with improved Lithium-ion batteries as well as 48V BLDC drive motors. In 2012, the new battery packs and motors were used in a new lunar rover prototype called Artemis Jr., which was also tested extensively in several lunar analogue sites. In 2013, ODG began working on a commercial variant of the Juno and Artemis Jr. rovers which is now in production. Known as the J5 Rover, the new vehicle was designed to be mass produced at a reasonable cost and be configurable to carry payloads that bring real commercial value. The J5 is designed to be extremely robust and almost indestructible with the ability to traverse even the most extreme terrain conditions. The J5 is completely weatherproof and truly amphibious with the ability to carry payloads safely across water. Commercial applications include defense, agriculture, search and rescue, mining, and security. The J5 is now in production ODG's new 30,000 sq.ft. facility in New Hamburg, Ontario using several parts already manufactured internally by ODG which enables a lower cost per unit production cost.

French

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