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MANAR GATE: ILLUMINATING THE FUTURE OF SUSTAINABLE LUNAR EXPLORATION

Abstract

Lunar missions are very important regarding to advancement in space exploring and are estimated to play a big part when it comes to a lunar economy that surpasses 142$ billion during next years. It is therefore very vital to make sure that these missions keep on going in order to keep the overall benefits of the long term use of space. The study focuses on how vehicles can be sustained without how efficient they are in order to solve major obstacles during Moon exploration missions.

Manar (lighthouse) Gate aims to advance a vehicle design that will ensure effective propulsion and sustainability as well by reducing high power consumption and overcoming refueling limitations. Specifically, this vehicle will be used as a mode of transportation around the moon thus acting as a pathway for other moon vehicles. This way; it will be possible to reduce expenses not spending more than what is necessary hence budgeting for the project.

The research includes numerical analysis and conceptual design of a lunar vehicle to reduce environmental impact, comparing its sustainability, applicability, and reliability with current lunar vehicles. The goal is to provide a sustainable solution for lunar missions, contributing to broader space sustainability and advancing lunar technologies.