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Contribution of Moon Village to Solving Global Societal Issues (2)

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MOON OLYMPICS: TECHNOLOGY READINESS AND ROADMAP

Abstract

With the 50th anniversary of the Apollo landing and the launch of the Artemis Program, lunar settlement and technologies for a sustainable presence on the Moon are now gaining a lot of attention in the global stage. To advance this initiative, international cooperation is extremely essential. The Olympic Games has been a long-standing beacon of peace and cooperation among nations. This paper builds on the concept of having the Olympics on the Moon as humanity's next frontier in the far future. First, key technologies necessary for the implementation of the Moon Olympics were identified covering the Trial and Preparation, and Game Delivery stages of the project. Technology topics identified include (1) human mobility systems, (2) Lunar habitat structures, and (3) cross-cutting communication technologies. Second, current Technology Readiness Level (TRL) of each technology was evaluated highlighting gaps against technology capability requirements necessary for future Olympic Committees to successfully hold the Games. Finally, technology roadmaps for key technologies identified were proposed considering today's progress in line with existing strategic roadmaps (e.g., The Global Exploration Roadmap) of major space players. This paper provides a brief review of development of each technology, summary of current efforts and technology readiness and proposed roadmap. Although many elements still need to be considered from a project management perspective, this paper gives unprecedented insights on the feasibility of having the most internationally involved event on the Moon in the decades to come.