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DEVELOPING PERSONAL MOBILITY DEVICES FOR ASTRONAUTS ON MARS AND THE MOON

Abstract

The development of personal mobility equipment for astronauts on Mars and the Moon is an important aspect of space exploration. Previously, astronauts relied on bulky and cumbersome suits to conduct extravehicular activities (EVA) on planetary surfaces. In recent years, however, interest has grown in developing more efficient and adaptable personal mobility systems capable of improving safety and mobility on the Moon and Mars. The purpose of this study is to examine previous trends in the development of personal mobility devices for space exploration, including wheeled rovers, treaded vehicles, and humanoid robots. Furthermore, it will examine current advancements in mobility technology, such as exoskeletons, drones, and improved propulsion systems. Additionally, the paper discusses the potential benefits and drawbacks of these novel technologies for astronauts on planetary surfaces. Ultimately, this research study provides an in-depth assessment of personal mobility equipment development for space exploration, including recent developments and future potential. As a result of the study, humans on the Moon and Mars may be able to use more efficient and adaptable mobility devices in the future, improving their safety and success. The potential mentioned in our study for hybrid mobility systems, as well as the application of artificial intelligence and machine learning in the creation of mobility devices, are promising areas for future study and development. The results of this study can be useful for space agencies and private companies working towards the future exploration of the Moon, Mars, and other planetary bodies, to enable more effective and efficient astronaut mobility and enhance the overall success of space exploration missions.

Keywords- Mobility Devices, Astronaut mobility, Exoskeleton