

Moonwalk

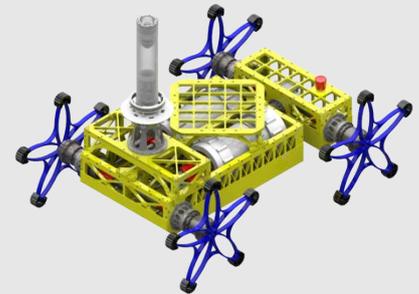
Human-Robot Collaboration for EVA Analogue Missions



Moon Analogue Mission in Marseilles



Mars Analog Mission in Rio-Tinto



Robot Assistant for Astronauts

Technologies and Human-Robot Collaboration for Surface EVA Exploration Activities and Training in European Analogue Environments

The objective of this project is the development and test of future technologies for missions to the Moon or Mars. Moonwalk will focus on the support for Astronauts by robots during activities related to the exploration of planetary surfaces. The control of robots in space is non-trivial because astronauts are limited in their movements by a bulky spacesuit and the missing or reduced gravity. Moonwalk develops new, practical methods for the interaction between astronauts and robots. These methods will be tested in earth-analogue missions that simulate low gravity (underwater mission in Marseille, France) and harsh environmental conditions (desert landscape in Río Tinto, Spain).

Project Details

In earth-analogue simulations of missions to Moon and Mars, one of the challenges is the simulation of operational constraints such as the reduced gravity or the communication delay between the astronauts and mission control on Earth.

Two analogue simulations are planned in Moonwalk to simulate some of the conditions that astronauts will encounter during future extravehicular activities (EVA) on planetary surfaces: The project will conduct simulations offshore the coast of the French city of Marseille, where an EVA on the lunar surface under reduced gravity will be performed. A second simulation

will be conducted in the Spanish desert region of Río Tinto, where operations are focusing on exobiological sampling and sampling procedures under extreme environmental conditions.

In both trials, the astronaut will wear a simulation spacesuit that recreates the properties of a real pressurized spacesuit. The focus of the trials will be on the testing of communication and cooperation between an astronaut and a robotic helper.

The US space agency NASA is an associate partner in the project.

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Partners:



Sponsored by:



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