

Lunar Exploration (2)
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POSSIBLE SCENARIOS FOR USING MOBILE ROBOTIC TECHNIQUES TO SUPPORT MANNED
LUNAR MISSIONS WITHIN THE FRAMEWORK OF THE RUSSIAN LUNAR EXPLORATION
PROGRAM

Abstract

The scientific and applied effectiveness of manned missions is closely related to the automation techniques used to support manned missions. In particular, to ensure the conditions for conducting a number of scientific and applied experiments, for maintenance of automatic scientific stations, for deploying scientific observatories and early elements of lunar infrastructure on the lunar surface the AR techniques are required. These techniques will provide transportation and power supply of equipment, including handling and service operations.

Currently, the Russian lunar exploration program is actively considering the area of rational applicability of different types of lunar rovers. In addition, specific scenarios of missions for preparing lunar infrastructure before arrival of humans, as well as scenarios of joint missions are being developed.

Within the framework of the presented paper possible scenarios of human- rovers interaction, including various types and sizes of task-oriented lunar rovers, their operational requirements and possible preliminary designs, to ensure effective lunar utilization and to develop scientific and technological robotic or man-visited lunar laboratory are being considered.