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MOHAB: MOBILE SIMULATION PLATFORM FOR FUTURE MOON AND MARS MISSIONS

Abstract

One of the greatest challenges of humanity nowadays is building a base on the Moon or Mars. While the idea for such a base is still in the planning phase, it will become a part of our reality within the next 20 years.

The MoHab project attempts to address several key elements of this challenge by building analogue of a mobile expeditionary base. The goal of MoHab is to enable long-term field research away from the home base. On the one hand, the project has been inspired by the two existing stationary analogues of Martian bases such as MDRS or Hi-SEAS, and on the other hand it emphasises mobility and short-term self-sufficiency (up to 5 weeks per rotation).

The analog design implies utilization of three 26-foot containers placed on specially adapted trucks. The number of vehicles and the amount of usable space determines the maximum size of the crew (6 people). The architecture of the mission assumes that vehicles move between previously prepared supply points, and they jointly form a temporary habitat during stopovers.

This article presents the architecture of the expedition system in detail, as well as the concept of base equipment which takes into account contemporary trends in specialized interior architecture. Moreover, this paper discusses a potential scenario of use of MoHab during the simulation of the Martian mission that will take place in Iceland in 2019 as a part of the upcoming EXO-19 mission.