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Author: Ms. Alondra Hauser
CRADLE Corp., United States

# CRADLE-CALIFORNIA RESEARCH ANALOG FOR DEEPSPACE AND LUNAR ENVIRONMENTS

**Abstract**

Testing and evaluation are essential process for delivering capable technologies that will contribute to human exploration. Space analog testing centers provide a simulation environment for validation of major systems. As the Artemis mission is under way, the aerospace industry finds the need for testing grounds in order to identify and solve problems that might arise for autonomous systems that will be essential for establishing a lunar base. Located in Lucerne valley California, CRADLE (California Research Analog for DeepSpace and Lunar Environments) provides the terrain needed to construct the lunar surface. This is update of an ongoing project with the purpose of terraforming the natural formation of the land to establish a lunar-like environment and to mirror human landing. Evaluation of the land and assessment of lunar base locations are necessary to determine the most realistic model in order to simulate south pole like conditions. End-to-end simulations for human and robotic interface are necessary for the advancement of space exploration. This will render the interest of prospective companies in order to facilitate testing, validation, and evaluation of autonomous and semi-autonomous systems. The outcome of this project provides value and support to multiple commercial and private aerospace organizations in order to mitigate risk and ensure project success. More importantly, the corporation aims to advance and assess risk management for key technologies in support of but not limited to the Artemis mission and beyond.