

Return to the Moon (02)  
Lunar Surface Outposts and Enabling Technologies (4)

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CONTOUR CRAFTING TECHNOLOGY FOR LUNAR SETTLEMENT INFRASTRUCTURE  
BUILDUP

**Abstract**

Several unique systems including the Lunar Electric Rover, the unpressurized Chariot rover, the versatile light-weight crane and Athlete cargo transporter as well as the habitat module mockups and a new generation of spacesuits are undergoing coordinated tests at NASA's facility for Desert Research and Test Studies (D-RATS). A synergetic simulation plan is proposed for utilizing these maturing systems coupled with a unique, patented robotic fabrication technology called Contour Crafting, tailored for swift and reliable lunar infrastructure development. Landing pads, roads, shade walls and thermal and micrometeoritic shields and other unpressurized structures that make up a majority of the initial lunar settlement infrastructure may be built using this technology, fully utilizing In-Situ Resource Utilization (ISRU) strategy. The intent is to increase astronaut safety, improve buildup performance, ameliorate lunar dust interference and concerns, and reduce time-to-commission, all in an economic manner.