

IAF SPACE OPERATIONS SYMPOSIUM (B6)  
New Space Operations Concepts and Advanced Systems (2)

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OPERATIONS PLANNING FOR A LUNAR LANDING MISSION AT MID-LATITUDES

**Abstract**

Planning the mission operations for a lunar landing mission poses some unique challenges. A solar-powered Lunar Lander, is constrained to complete operations within a single lunar day. This impacts how the Lander supports the two micro rovers carried by it. The TeamIndus Mission Planning and Operations team has performed analysis in coordination with the Lander Systems Engineers to negotiate the boundaries between system design and margins while aiming to complete all primary mission objectives at the earliest.

The studies that will be covered in the paper include inputs from mission design - orbital strategy, descent and landing - and terrain conditions, power, communication and thermal design limits, rover support requirements as well as some details on the relationships between each of the above. The interaction between these inputs when preparing the preliminary operations plan was a major learning highlighting the tight coordination required between design and operations.