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Executive Summary

The mission profile for Project Janus calls for two definable stages to the moon: the Slowboat Configuration and the Crew Transfer Vehicle. The Slowboat configuration is composed of a Lunar Transfer Vehicle, a four-sided Connection Module, and a propulsion system. This assembly will depart from Low Earth Orbit and park in a lunar polar orbit, where it will later rendezvous with the Crew Transfer Vehicle. Consisting of the Service Module and the Command Module, the Crew Transfer Vehicle will transfer crew and payload from Low Earth Orbit to lunar polar orbit and rendezvous with the Slowboat by docking with the Connection Module. From this point the crew and payload will transfer to the Lunar Transfer Vehicle, descend to the moon's surface, and conduct required lunar operations. Upon completion of the lunar operations, the crew and payload will return to its port on the Connection Module. The crew will then transfer back to the Crew Transfer Vehicle. The Lunar Transfer Vehicle will be reusable for up to three missions and will be re-fueled prior to the launch of the Crew Transfer Vehicle for the second and third missions.

Presently, there are four mission requirements that dominate the design process. The independent requirements are transferring crew and payload to the moon and transferring both back to Earth. The dependent requirements are safety and affordability. The missions need to maintain high safety factors, while at the same time it needs to be affordable enough to be carried out yearly. The cost analysis performed through the Final Design Report show promising results. The total cost of Project Janus is projected to be \$65.04 billion over the course of twelve years (\$5.42 billion per mission). This price is much lower than the \$167.05[1] billion spent overall on the Apollo missions. This difference results primarily from the reusability of the LTV as well as the use of pre-existing launch vehicles.