

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
In-Space Transportation Solutions and Space Logistics (8)

Author: Mr. Kevin Smith  
Orbit Fab Ltd, United States

THE COMMERCIAL CASE FOR REFUELING: A VIEW OF LEO, GEO AND CISLUNAR AND HOW  
REFUELING ENABLES INCREASED MISSION CAPABILITY.

**Abstract**

The current state of the art for Satellites with storable propellants is one-time propellant tank use. This has numerous downstream effects in satellite design and operation. A full analysis of the impacts of refueling at a variety of orbits has guided the design of architecture of refueling capability for each major orbit. The unique characteristics of each orbit lead to variables that resulted in slightly different outcomes. The main outcome of this analysis identified GEO orbit as the most promising orbit for initial servicing. However, the paradigm shift in refueling may alter those trades. The models built here were designed with the future in mind and can be swiftly updated as system architects adapt to satellites with refueling capabilities.