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

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BUILDING SPACE LOGISTICS MARKETS : WHERE ARE WE NOW ?

Abstract

This paper explores the burgeoning domain of in-space transportation solutions and space logistics, providing a comprehensive analysis of existing and under-study capabilities and mission architectures. With a focus on the evolving landscape of space commerce, the study examines the market dynamics and technical intricacies of in-space transportation, encompassing not only propulsion technologies but also crucial enabling missions such as robotic servicing and supply.

The research begins by dissecting the current state of in-space transportation capabilities, delving into propulsion systems, orbital maneuvering strategies, and spacecraft architectures. By evaluating the efficiency, versatility, and scalability of these technologies, the paper provides a technical foundation for understanding the market fit of in-space transportation solutions.

In addition to propulsion systems, the study navigates the space logistics domain, emphasizing the importance of support missions such as robotic servicing and supply missions. These missions play a pivotal role in enhancing the sustainability and longevity of spacecraft, contributing to the overall economic viability of in-space endeavors. The paper scrutinizes existing and potential future architectures for such missions, shedding light on their technical feasibility and market demand.

Moreover, the paper explores technology roadmaps, outlining the trajectory of advancements in in-space transportation and logistics. By analyzing ongoing research and development efforts, the study offers insights into the future evolution of technologies that will shape the in-space transportation landscape.

In conclusion, this paper provides a holistic understanding of in-space transportation solutions and space logistics from both technical and market-oriented perspectives. By bridging the gap between technological capabilities and market dynamics, it serves as a valuable resource for industry professionals, policymakers, and researchers involved in charting the course for the future of in-space transportation and logistics.