

IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY OF SPACE ACTIVITIES (E9)

Interactive Presentations - IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY OF SPACE ACTIVITIES (IP)

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ADVANCEMENTS IN PAYLOAD HOSTING OPERATIONS FOR NEW SPACE: ADDRESSING CHALLENGES, STREAMLINING PROCESSES, ENHANCING ECONOMIC VIABILITY, AND DEMONSTRATING EFFICACY THROUGH EMPIRICAL EVIDENCE

Abstract

Payload hosting operations in new space pose unique challenges due to the intricacies of operating experiments onboard a satellite. While the utilization of hosted payloads can provide a cost-effective option for small and medium-sized enterprises, it is not always a straightforward task to accomplish.

To gain a more profound understanding of the challenges and opportunities associated with payload hosting operations in new space, we conducted comprehensive market research. Our research revealed that one of the primary obstacles in hosting payloads is the command of complex experiments from the ground. To mitigate this challenge, it is advisable to delegate as much complexity as possible to the satellite, enabling ground operators to operate the experiment with as few interventions as possible. Additionally, balancing resources between payloads is a task that can be addressed through smart scheduling algorithms and automation. By determining the optimal way to activate and deactivate payloads, resource utilization can be optimized, ensuring efficient and effective operation of all payloads. Despite these challenges, advancements in technology and innovative techniques, such as scheduling algorithms and automation, have enabled more efficient utilization of hosted payloads. Empirical evidence from our research reveals that hosted payloads can be a cost-effective option for small and medium-sized enterprises, with several companies reporting significant cost savings. By leveraging these advancements and addressing the challenges associated with payload hosting, it is now possible to provide affordable and accessible access to space for smaller organizations, enabling them to participate in the global satellite payload market.

This presentation will discuss how advancements in technology and innovative techniques can address the challenges associated with payload hosting operations in new space. By offering insights into the intricacies of operating experiments onboard a satellite and how to streamline the process, the presentation will provide practical solutions to enhance economic viability. The presentation will also showcase real-life examples of companies that have successfully implemented hosted payloads and have experienced significant cost savings, demonstrating the efficacy of this approach. In conclusion, our research findings suggest that addressing the challenges associated with payload hosting and leveraging advancements in technology and innovative techniques can lead to a considerable improvement in the economic viability and effectiveness of payload hosting operations in new space. This approach can provide affordable and accessible access to space for small and medium-sized enterprises, enabling them to participate in the global satellite payload market.