

57th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
ACTIVITIES (D5)

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MANAGEMENT IN SPACE ACTIVITIES (IP)

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NAVIGATING SUSTAINABILITY IN THE SPACE INDUSTRY: KEY PRINCIPLES FOR FUTURE  
MISSIONS

**Abstract**

In the space industry, the notion of sustainability encompasses diverse facets like engineering practices, organizational strategies, and global economic viability. As the space sector experiences remarkable growth and involves a wider array of stakeholders, sustainability emerges as a pivotal concern for ongoing and forthcoming ventures.

This piece highlights three core sustainability principles applicable within the space domain: reusability, lifespan extension, and international collaboration. Reusability involves leveraging project components and organizational procedures to streamline costs and ensure consistency across similar projects. Lifespan extension focuses on crafting resilient space assets capable of enduring service, with adaptable components and software facilitating upgrades. International collaboration, illustrated by projects like the International Space Station (ISS), underscores the feasibility of missions involving multinational stakeholders, resilient to political discord and with enduring mission objectives.

By elucidating these principles and showcasing relevant case studies, this paper aims to guide future space missions in integrating sustainability considerations. Implementing these principles promises to enhance inclusivity, resilience, and cost-effectiveness in space projects, fostering a sustainable and prosperous space sector.