

36th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Cost and Procurement impacts on Space Programmes linked to high inflation and world-wide scarcity of
components and materials (6)

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Abstract

Space programs have always been associated with high costs due to the complexity of the mission and the technology involved. In recent years, the cost of these programs has been further impacted by the high inflation rate and worldwide scarcity of essential components and materials. The situation is made worse by the COVID-19 pandemic, which has disrupted global supply chains, making it even more challenging to procure materials and components. The increasing inflation rate globally has been a significant challenge for space programs, leading to a rise in the cost of materials and components needed for space missions. The cost of space missions continues to rise, limiting their accessibility to many countries and individuals. The high cost also poses a significant financial challenge to space agencies, and there is a need to find ways to reduce the cost to ensure continuity. The worldwide scarcity of essential components and materials poses a significant challenge to space programs. The limited availability of these materials can cause significant delays in space missions and lead to increased costs. In many cases, space agencies must wait for months or even years to procure these materials, which can be detrimental to mission timelines and success. Space agencies must adopt new procurement strategies to address the challenges associated with high inflation and worldwide scarcity of components and materials. There are several potential solutions to mitigate the impact of inflation and scarcity on space programs: One way to address the problem is by developing alternative sourcing options, such as investing in the research and development of new materials and technologies that can replace scarce resources. Another way is to prioritize procurement efforts based on the criticality of the component or material to the mission. Space agencies can identify the most critical components and prioritize their procurement. This approach reduces procurement costs and ensures that the essential components are available when needed. In conclusion, the cost and procurement of essential components and materials have a significant impact on the success of space programs. The high inflation rate and worldwide scarcity of these resources pose significant challenges, making it necessary for space agencies to adopt new procurement strategies. By doing increased collaboration between governments and private companies, investing in research and development of new materials and technologies (3D printing), focusing on resource utilization, increased international cooperation, investing in artificial intelligence (AI) and using reusable launch vehicles, etc space agencies can mitigate the impact of these challenges and continue to drive scientific exploration and innovation.