Incorporating Standardization into Space Systems for Space Missions

Analysis of the First Satellite Subsystem Adapter for a CubeSat Technology Demonstration Mission

The Research Team fosters creative innovation, aspires to international growth and attracts foreign direct investment in Research and Product Development. Since 2015, the Team diligently accomplished their mission with five (5) Distinguished Projects. The Team proposes an extensive horizon of prime products and significant services to organizations and drive major cooperation projects by reinforcing partnerships with research and development organizations.

Author

PRINCIPAL INVESTIGATOR

As a natural-born self-starter, I am dedicated, diligent, reliable, responsible and a passionate team player looking to put a 100% of myself. I am a follower of science and technology. Being a Chess Player, one of the key skills that I value the most is 'Patience'. Thus, I am committed to involve myself with every change.

Co-Author

RESEARCH ASSISTANT

Hi! I graduated with a Bachelor of Engineering (B.E.) Degree in Electronics and Telecommunications Engineering from the University of Mumbai, Mumbai, India. I am trustworthy, honest, energetic, dedicated, and diligent. My hobbies are playing chess, carom, badminton, listening to music and watching movies. Above all, I would say I'm a positive and enthusiastic person.

D. 'A'. M.

Introduction

Every neoteric year, an assortment of actors, namely Space Academics, Space Agencies, and Space Companies are proposing space missions with increasing focus on maximizing the reliability of satellites, and spacecrafts. The Satellite, or Spacecraft Design Engineer and the systems engineering teams concurrently conduct a series of trade-off studies on various commercial-off-the-shelf components to design a satellite, or spacecraft. The electrical interfaces of the selected components, and standard products are usually customized following the fully functional requirements to exhibit adequate capacity, dimensions, and mass for typical satellite, or spacecraft configurations while also providing the performance necessary to complete the Mission. Standardized interfaces hardly exist and hence, space systems are highly customized systems. The results of planned redesign of the system come to fruition with increasing costs, risks of space missions, and time of satellite manufacturing. A space company based in Darmstadt, Germany, addresses this insufficiency in standardization and introduces an universal adapter to accelerate the design of a satellite, or spacecraft with higher efficiency of the systems engineering activities.

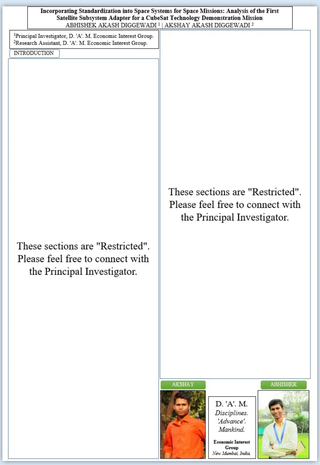
Research Project

- The subsections of the Research Project are "Restricted".
- Please feel free to connect with the Principal Investigator.

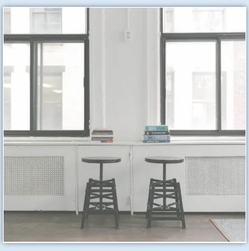
Focus

An analysis of the first satellite subsystem adapter is presented with a primary focus on its capability to transform incompatible off-the-shelf components into plug-and-play for satellite manufacturers. Furthermore, the significance of incorporating standardization into satellite systems, or spacecraft systems for both the crewed or uncrewed space missions is presented. In addition, an existing relationship between the standardization and operations in extreme environments and situations, and the standardization and coaching or training activities of personnel is presented. To address the significance of incorporating standardization for crewed space missions, an existing relationship with the field of Space Psychology is presented with a primary focus on the capacity, capability and efficiency of personnel to engage in extreme environments and situations and ensure safe habitability.

Distinguished Poster



Acknowledgements



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