

Through Integrated Project Management and Systems Engineering to Support System Design Development: A Project Management-based Systems Engineering Approach

Authors : Xiaojing Gao, James Njuguna

Abstract : This paper emphasizes the importance of integrating project management and systems engineering for innovative system design and production development. The research highlights the need for a flexible approach that unifies these disciplines, as their isolation often leads to communication challenges and complexity within multidisciplinary teams. The paper aims to elucidate the intricate relationship between project management and systems engineering, recommending the consolidation of engineering disciplines into a single lifecycle for improved support of the design and development process. The research identifies a synergy between these disciplines, focusing on streamlining information communication during product design and development. The insights gained from this process can lead to product design optimization. Additionally, the paper introduces a proposed Project Management-Based Systems Engineering (PMBSE) framework, emphasizing effective communication, efficient processes, and advanced tools to enhance product development outcomes within the product lifecycle.

Keywords : system engineering, product design and development, project management, cross-disciplinary

Conference Title : ICPIE 2024 : International Conference on Production and Industrial Engineering

Conference Location : Singapore, Singapore

Conference Dates : March 25-26, 2024