

Graduate Student Research Seminar

Spring 2025

Establishing A Protocol for Observing Tradespace Exploration Activities in Engineering Design Teams

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3:00 pm (EST) – 132 Fluor Daniel Building



Abstract

This work establishes a new protocol for characterizing and understanding exploration-related and analysis-related actions during multi-stakeholder tradespace studies. The protocol is developed based on a literature review examining processes and activities prescribed for tradespace exploration and analysis in the systems engineering domain and for analysis of alternatives (AoA) in the acquisitions domain. The protocol was applied to a video recording of a morphological chart-based tradespace exploration problem conducted by a team of graduate students. The results of the protocol application were analyzed using interrater reliability and agreement methods. The protocol demonstrates low levels of interrater agreement using the percent agreement metric. To improve the protocol, changes are proposed to incorporate leadership behaviors, clarify the definitions of constituent protocol activities and simplify the data reporting method.



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