Proceedings of the Annual General Donald R. Keith Memorial Conference
West Point, New York, USA
May 4, 2017
A Regional Conference of the Society for Industrial and Systems Engineering

Soldier Systems Engineering Architecture Modeling Analysis

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Abstract: The relationship between a soldier's equipment, task and ability is a key element of understanding what is vital to mission success. The goals of the Soldier, Equipment, Task (SET) framework and Soldier Systems Engineering Architecture (SSEA) are to model the soldier as a system, defining the relationship between soldier, training, doctrine, and materiel solutions. The different aspects outlined in the SET framework influence the soldier differently. The goal is to find the soldier architecture that maximizes performance of a specific task. Using a Systems Engineering approach, our capstone developed the architecture and candidate models that allow for clear understanding of the soldier system's trade space between fitness, equipment weight, and road march performance. For our analysis, our capstone group developed a scenario involving a tactical road march over terrain in West Point, New York to assess physical performance and exhaustion level based on the calculations in the models we developed.

Keywords: SSEA Framework, SET Framework, Model, Architecture