ABSTRACT:

The objective of the course is to present the best practices for Trade-off Analyses using the Decision Management Process developed by the International Council on Systems Engineering (INCOSE) Decision Analysis Working group for the new Systems Engineering Handbook and the Systems Engineering Body of Knowledge (SEBoK). The course uses the concepts of Value Focused Thinking (VFT) and Multiobjective Decision Analysis (MODA) to structure the decision requiring the trade-off analysis. The course includes decision management, framing a decision, developing objectives and value measures, generating alternatives, prioritizing the objectives, developing a value model, evaluating alternatives, analyzing the model, communicating results, and common mistakes. In addition, the course will provide a two-hour overview and hands-on demonstration of the tradespace tool under development by the Department of Defense’s Engineered Resilient Systems (ERS) program and Georgia Tech Research Institute (GTRI). The hand on portion of this course covers three foundational functions of the tool: 1) systems definition, 2) multi-dimensional tradespace generation, and 3) initial tradespace analysis capabilities of multi-user collaborative version of the tool. The course concludes with attendees walking through a practice example of how to use the tool can functions using an illustrative system based on a historical platform.

Time: 10 hours.