Simulink for Aerospace System Design

Prerequisites

MATLAB Fundamentals for Aerospace Applications

Day 1 of 2	
Creating and Simulating a Model	**Objective:** Create a simple Simulink model, simulate it, and analyze the results. Introduction to the Simulink interface Potentiometer system System inputs and outputs Simulation and analysis
Modeling Programming Constructs	**Objective:** Model and simulate basic programming constructs in Simulink. Comparisons and decision statements Vector signals PWM conversion system Zero crossings MATLAB Function block
Modeling Discrete Systems	**Objective:** Model and simulate discrete systems in Simulink. Discrete signals and states PI controller system Discrete transfer functions and state-space systems Multirate discrete systems
Modeling Continuous Systems	**Objective:** Model and simulate continuous systems in Simulink. Continuous states Throttle system Continuous transfer functions and state-space systems Physical boundaries

Day 2 of 2	
Solver Selection	**Objective:** Select a solver that is appropriate for a given Simulink model. Solver behavior System dynamics Discontinuities Algebraic loops

Day 2 of 2	
Developing Model Hierarchy	**Objective:** Use subsystems to combine smaller systems into larger systems. Subsystems Bus signals Masks
Modeling Conditionally Executed Algorithms	**Objective:** Create subsystems that are executed based on a control signal input. Conditionally executed subsystems Enabled subsystems Triggered subsystems Input validation model
Combining Models into Diagrams	**Objective:** Use model referencing to combine models. Subsystems and model referencing Model referencing workflow Model reference simulation modes Model workspaces Model dependencies
Creating Libraries	**Objective:** Use libraries to create and distribute custom blocks. Creating and populating libraries Managing library links Adding a library to the Simulink Library Browser