

System Composer for Architecture Modeling

OEM: MathWorks • Code: MW-SYSTEM-COMPOSER-FOR-ARCHITECTURE-MODE

COURSE DESCRIPTION

This one-day course focuses on developing and analyzing model-based architectures with System Composer™ and Requirements Toolbox™. Identifying the role of architectural modeling in Model-Based Design Creating functional, logical, and physical architectures Associating and tracking non-functional properties in architecture elements Analyzing architecture models for early requirement validation Generating architecture visualizations

AUDIENCE PROFILE

- IT professionals and technical staff seeking hands-on training in this course's subject area.

PREREQUISITES

- Simulink Fundamentals
- Basic knowledge of Systems Engineering concepts is recommended

COURSE OBJECTIVES

By the end of this course, participants will be able to:

- Introduce the concept of Model-Based Design and outline the advantages of System Composer.
- Articulate general attributes of requirements and capture requirements with Requirements Toolbox.
- Introduce the three main types of system architectures and build logical architectures.
- Discuss how to create variant and reference components, and how to use physical ports.
- Capture system properties for individual elements with stereotypes and leverage MATLAB® to analyze and aggregate these properties.
- Generate views, diagrams, allocations, and tracking requirements to enhance the digital thread of the project.

COURSE OUTLINE

Module 1: Day 1 of 1

Introduction to Model-Based Design

- Advantages of System Composer

- Model-Based Design Process
- Subsystem Implementation
- Testing, Verification and Validation
- Course Example Walkthrough

Working with Requirements

- Identifying and writing high-level requirements
- Writing requirements
- Creating requirement sets
- Importing requirements

Logical System Architectures

- Distinguishing between functional, logical and physical architectures
- Creating logical architectures
- Creating interfaces in System Composer
- Linking Simulink models

Physical System Architectures

- Creating physical ports in physical architectures
- Adding reference architectures
- Adding variant components

Capturing and Analyzing System Properties

- Introducing profiles and stereotypes
- Creating and customizing stereotypes for elements
- Creating stereotype properties
- Analyzing system properties with MATLAB

Enhancing Architecture Traceability

- Generating hierarchical diagrams of architecture models
- Highlighting specific paths, domains, and areas of responsibility in architecture models
- Using sequence diagrams
- Allocating between functional, logical, and physical architectures
- Tracking requirement traceability