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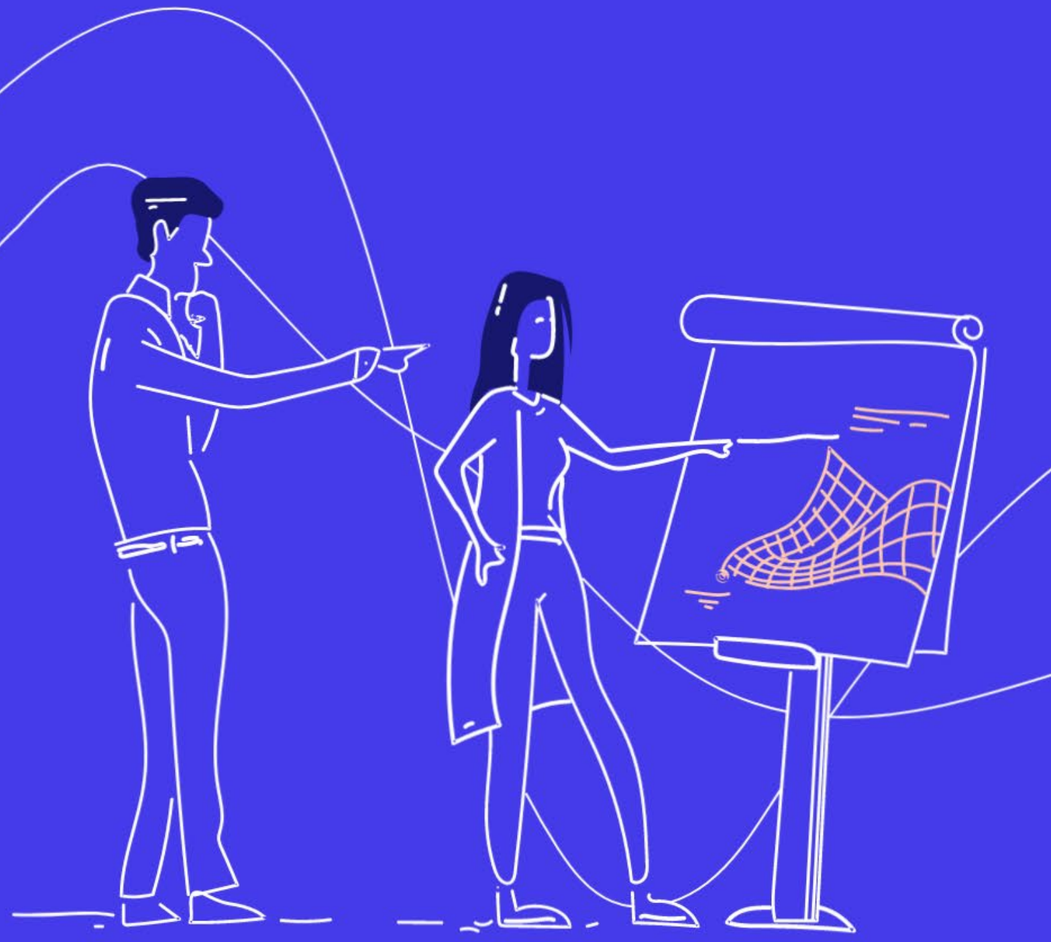
Simulink Model Management and Architecture



SciEngineer's training courses are designed to help organizations and individuals close skills gaps, keep up-to-date with the industry-accepted best practices and achieve the greatest value from MathWorks® and COMSOL® Products.

Simulink Model Management and Architecture

This two-day course describes techniques for applying ModelBased Design in a common design workflow. It provides guidance on managing and sharing Simulink models when working in a large-scale project environment. This course is intended for intermediate or advanced Simulink users.

Prerequisites

MATLAB Fundamentals and Simulink Fundamentals. This course is intended for intermediate or advanced Simulink users.

TOPICS

Day 1

- Model-Based Design
- Requirements Linking and Interface Control
- Model Architecture
- Project Management

Day 2

- Data Management
- Model Scalability
- Model Performance
- Modeling Standards
- Reporting
- Appendix B: System Composer®

Model-Based Design

OBJECTIVE: Get a brief overview of how Simulink models can be used in a traditional design process. Discuss where the material covered in this course fits into that process.

Requirements Linking and Interface Control

OBJECTIVE: Link a Simulink model to system requirements, illustrate data flow, and define system interfaces.

- Component stubs
- Requirements linking
- Component interfaces
- Bus objects

Model Architecture

OBJECTIVE: Discuss the pros and cons of the different features used for organizing a Simulink model into separate components.

- System component considerations
- Virtual subsystems
- Atomic subsystems
- Subsystem references
- Model references
- Libraries
- Component variants

Project Management

OBJECTIVE: Discuss how to effectively organize a project (containing models, data, documentation, etc.) and perform configuration management tasks.

- Project setup
- File shortcuts and labels
- File dependencies and impact
- Referenced projects
- Source control integration
- File differences

Data Management

OBJECTIVE: Explore the data dependencies of a Simulink model and learn best practices for managing a Simulink model's data.

- Workspace precedence
- Parameter management
- Saving and loading data
- Data dictionaries

Model Scalability

OBJECTIVE: Understand data objects, partition data in dictionaries, and create reference projects and configuration sets to organize large projects.

- Data objects
- Reference data dictionaries
- Reference configuration sets
- Data partitioning
- Reference projects

Model Performance

OBJECTIVE: Learn how to improve simulation performance, use acceleration modes and understand their tradeoffs.

- Simulink Profiler
- Simulation modes
- Comparing performance
- Performance Advisor

Modeling Standards

OBJECTIVE: Explore how to set up and enforce modeling standards, check for common modeling errors, and optimize model performance.

- Modeling standards
- Model Advisor
- Reporting results
- Additional Simulink advisors
- Templates

Reporting

OBJECTIVE: Discuss the methods of automatically creating reports and documentation from Simulink models.

- Web views
- Standard reports
- Custom reports

Appendix B: System Composer®

OBJECTIVE: Introduce System Composer for requirements and system architecture workflows.

- Introducing System Composer
- Working with requirements
- Creating architectural elements
- Defining stereotypes for each type of element
- Analyzing architectures
- Creating architectural views
- Linking Simulink models

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Expand your knowledge