

CESL02: SimuLink S-Functions

(1-day)

This course is intended to provide training on SimuLink S-functions (system functions). S-function provides a powerful mechanism for extending the capabilities of SimuLink. This course explains what is an S-function, its importance, and how to write your own customized S-function. The prerequisite for this course is CESL01: SimuLink and CEML01: MATLAB fundamentals and programming techniques.

Day 1 of 1

Introduction

- A quick overview of MATLAB computing environment
- Overview of SimuLink: A tool for simulation and Model-based design
- Course content and material discussion

Introducing S-functions

- S-function overview
- S-function requirements
- Using S-functions in models
- Simulation procedure of generic systems
- Working of an S-function
- Interaction between an S-function and SimuLink solver

Implementing S-functions

- Writing M-file S-function
- Program structure of M-file S-function
- Integrating the M-file S-function into a SimuLink model using the S-function block
- Using the template implementation
- M-file S-function examples
- Creating M-file S-function with parameters
- Creating M-file S-function with discrete and continuous states

Using the S-function builder

- S-function builder concepts
- Building C-file S-function automatically
- Integrating an S-function into a model using S-function builder block

Hands-on experiments

- Case studies and hands-on experiments