

# Testing Generated Code in Simulink®

## Prerequisites

*Simulink® for System and Algorithm Modeling* (or *Simulink for Automotive System Design* or *Simulink for Aerospace System Design*). Knowledge of C programming language.

Day 1 of 1	
<b>Simulation Speedup with Code Generation</b>	<p><b>Objective:</b> Speedup the simulation of your Simulink models and perform Monte Carlo simulations using the code generation features in Simulink.</p> <ul style="list-style-type: none"><li>Normal simulation mode</li><li>Accelerator mode</li><li>Rapid Accelerator mode</li><li>Standalone rapid simulation (Rsim)</li><li>Simulation speed comparison and tradeoffs</li><li>Monte Carlo simulation with Rsim target</li></ul>
<b>Parameter Tuning with External Mode</b>	<p><b>Objective:</b> Tune parameters in the embedded application using the External mode feature in Embedded Coder.</p> <ul style="list-style-type: none"><li>External mode workflow</li><li>Parameter tuning in External mode</li><li>External mode considerations</li></ul>
<b>Code Generation</b>	<p><b>Objective:</b> Generate code for algorithm implementation and integrate the code with an execution harness or legacy code.</p> <ul style="list-style-type: none"><li>Generating Generic Real-Time (GRT) code from a model</li><li>Verifying GRT code</li><li>Generating Embedded Real-Time (ERT) code from a model</li><li>ERT code modules and entry points</li><li>Calling model entry points</li><li>Integrating external code</li></ul>
<b>In-the-Loop Verification</b>	<p><b>Objective:</b> Verify generated code using Simulink Coder and Embedded Coder.</p> <ul style="list-style-type: none"><li>Generating an S-function from a subsystem</li><li>Software-in-the-loop (SIL) verification</li><li>Processor-in-the-loop (PIL) verification</li><li>Verifying a subsystem using SIL and PIL</li><li>Verifying an entire model using SIL and PIL</li><li>Legacy code and verification</li></ul>
<b>Code Execution Profiling</b>	<p><b>Objective:</b> Profile execution times in generated code using Embedded Coder.</p> <ul style="list-style-type: none"><li>Code execution profiling for a subsystem</li><li>Selective profiling</li><li>Code execution profiling for an entire model</li><li>Applications of code execution profiling</li></ul>

