

Code Generation for AUTOSAR Classic Software Components

OEM: MathWorks • Duration: 2 Days (16 hrs) • Code: MW-CODE-GENERATION-FOR-CLASSIC-AUTOSAR-S

COURSE MODULES & TOPICS

Day 1 of 2

AUTOSAR Classic Platform Overview

- AUTOSAR software platforms
- Parts of an AUTOSAR Classic software component
- AUTOSAR Classic workflows in Simulink

Importing AUTOSAR Software Components

- AUTOSAR XML (ARXML) description
- Importing AUTOSAR software components
- Array and enumeration data types
- Adding functionality to generated Simulink models
- Simulating with a harness model
- AUTOSAR code generation
- Structure and fixed-point data types
- Managing imported data types in Simulink
- Importing modified ARXML files

Exporting AUTOSAR Software Components

- Creating AUTOSAR Components
- Mapping Simulink model objects to AUTOSAR software components
- Generating code and exporting ARXML files

Modeling AUTOSAR Ports and Interfaces

- AUTOSAR Communication overview (ports and interfaces)
- Modeling sender-receiver communication
- Modeling AUTOSAR modes
- Modeling client-server communication

Modeling AUTOSAR Events

- AUTOSAR events overview
- Simulating events in Simulink models
- Timing (periodic) events

- Nonperiodic events overview
- Modeling data received events
- Modeling mode switch events
- Triggering initialization
- Simulating nonperiodic events

Day 2 of 2

Modeling Calibration Parameters and Per-Instance Memory

- Modeling calibration parameters provided by parameter SWCs
- Modeling internal calibration parameters: shared by all instances
- Modeling internal calibration parameters: separate copy for each instance
- Modeling per-instance memory
- Generating ASAP2 files for calibration systems

Modeling AUTOSAR Variants

- Creating variant subsystems in rate-based models
- Generating AUTOSAR variants

Modeling AUTOSAR Compositions and Software Architecture

- Creating AUTOSAR software architectures and compositions
- Generating AUTOSAR software components
- Exporting AUTOSAR compositions and software components
- Simulating AUTOSAR software architecture models
- Importing AUTOSAR compositions
- Generating code for reusable software components

Modeling Basic Software Services

- Basic software services overview
- Setting diagnostic statuses
- Monitoring diagnostic statuses
- Reading and writing NVRAM
- Monitoring NVRAM