AUTOSAR – 4 Days RTE Training

Duration: **4 Days**

Delivery Format: **Classroom/Online**

Training Curriculum:

Day 1

AUTOSAR Introduction, ASWC

- Overview and Introduction to AUTOSAR Architecture
- AUTOSAR Methodology- understanding System description, SWC Description, System Extract and ECU extract
- AUTOSAR tools
- AUTOSAR Interfaces
- Application Design in VFB Level
- Understanding the usage of different AUTOSAR Software Component (Application, Sensor Actuator, Complex Device driver etc) and deriving their relevance to C code
- Ports and Port Interfaces
- Compatibility of Data Types
- Composition and Delegation Ports
- Multiple instances
- Building an Application Software Component as per AUTOSAR standard using tool.

Day 2 and Day 3

Run Time Environment (RTE)
- RTE Contract Phase
- RTE Generation Phase
- File Structure of ASWC and RTE
- List of files which get generated in Contract Phase and Complete Generation Phase

- RTE for runnable
    a. RTE Events
    b. RTE access points
    c. Task Mapping with OS and Scheduling of Runnable Entities
- RTE interaction with OS for scheduling of runnable
- RTE Communication Paradigms

a. Sender Receiver Communication

   i. Direct(Explicit) & Implicit

b. Client Server Communication

   i. Synchronous & Asynchronous

c. Code Review and understanding how these different communication paradigms get converted to equivalent C Code.

d. Code flow

e. Setting up init values

f. RTE Filtering

Day 4

RTE continuation

- RTE APIs
- RTE Return Types and Argument
- RTE Variables
- Port API Mapping
- RTE Error Handling
- Handling RTE Variables for Multiple Instances of a Component Type
- RTE Integration with BSW modules
    A. Data mapping for Inter ECU communication (Communication Stack)
    B. RTE Communication with the IO stack
    C. RTE and Complex Device Drivers
    D. Standardized AUTOSAR interfaces for accessing Memory and other managers (Communication and Diagnostics)
- RTE Interrupt Decoupling and Notification
- RTE Solutions for DATA Inconsistency
- Building RTE Wrappers for migration code migration. (Legacy to AUTOSAR or for future migration)