CLASSIC AUTOSAR 3 WEEKS TRAINING (120 Hrs)

Company Confidential **ANCIT**

Classic AUTOSAR Course Agenda from ANCIT

Delivery Format	:	This Course is offered in Classroom or Online Format
Duration	:	120 Hours (3 Weeks)
Target Group	:	Embedded Engineers in AUTOMOTIVE, ECU Developer and User, Project Leaders
Prerequisites	:	Knowledge about software development for automotive systems
Outcome	:	Automotive Protocols- CAN & UDS, Automotive SDLC, GIT, AUTOSAR Architecture, AUTOSAR Stack Configuration, Implementation & Testing with more emphasis on the Communication and Diagnostics Stack

Day 1. AUTOSAR – Introduction & ASWC

- Overview and Introduction to Architecture
- Application Design in VFB Level
- Software Component
- Interfaces in AUTOSAR

Day 2. RTE & OS

- RTE Layer
- Implement RTE
- OS
- Implement the ASWC with OS and RTE

Day 3. RTE & OS Implementation

- Implementing the ASWC - Exploring all the possible RTE implementation.
- Integration of ASWC with other stacks
- Code navigation in RTE. Demonstrating how RTE Events trigger the runnables with the help of OS
- Code navigation of access points.

Day 4. CDD and IO Stack

- IoHwAb Layer
- DIO Driver
- PORT Driver
- PWM Driver
- ICU/OCU Driver
- ADC Driver
- Implementation- Managing the IO Stack using the IO Abstraction Layer
- Complex Device Drivers
- Configuring Interrupts through OS and without OS

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Day 5. COMMUNICATION and CAN Stack with Implementation

- Communication Module
- PDUR
- CANIF
- CAN Driver
- CAN Transceiver
- IPDUM
- CAN TP
- Implementation of Communication Stack
- Loading the dbc file and monitoring the code flow from Com Module to CAN using ECUC reference
- Compare the dbc file and the PDUs and make sure the data constraints are applied and the PDU config in stack and dbc are the same

Day 6. Configuring the COM Module, PDUR, CANIF and CAN controller

- Trace the Signal/PDU in the com stack
- Configure the Com Module for requirements
- Configure the other modules and fix all the dependency errors
- Do Data Mapping
- Generate the Code
- Differentiate Com Send and Com Receive signal Behavior in code
- Monitor Update Bit behavior in code
- Gateway Functionality – Signal Routing, Application Routing and PDU Routing
- Application to Check the status of the COM manager and implement the logic to transmit data only if COMM is in FULL COM
- Handling Callbacks and Callouts

Day 7. BSW Manager and ECU Manager

- Mode Management Introduction and Implementation
- Configuring the BSW Manager for the Communication Stack and a mode Switch condition as given by the ANCIT team
- ECU Manager understanding, Configuration and Callouts

Day 8 & 9. Memory Stack and Implementation

- EEPROM driver
- Flash Driver
- Fee
- EA
- MemIf
- NVM
- Implementation of Memory Stack
- Boot Loader Introduction
- Memory Mapping

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Day 10. UDS Theory

Day 11, 12, & 13 UDS, Diagnostic Stack and Implementation

- DEM
- DCM
- FIM
- DET
- Implementation of Diagnostic Stack
    a) Service IDs implementation 0x10, 0x3E,0x27, 0x22, 0x2E, 0x31, 0x28, 0x11, 0x14,0x19,0x85.

Day 14 & 15. Implementation of specific use case as evaluation

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