MCAL Validation

Business Challenge

Validate the MCAL driver's integration with the Automotive control system software, handle various control tasks, and ensure accurate and timely data exchange with the microcontroller's peripherals

Requirement

Validation to be performed comprising of the below.

Configuration Test: All module configuration to be tested such as different MC variants, clock frequencies, memory configuration interrupt priorities, pin configurations, and communication settings

Functional Test: Develop functional test cases to validate the MCAL driver's functionality, including input/output handling, interrupt handling, and real-time control tasks.

Fault Injection Test: Behaviour of the modules to be verified when faults are present in the system

Technology & Tools

- **Hardware** : Multi core AURIX family of 32/64 -bit microcontrollers.
- **Compilers** : GNU, GHS, Tasking
- **Tools** : Windriver PLS Universal Debug Engine, EB Tresos, Clearcase and JIRA
- **Language** : Embedded C

Value add by Mirafra

- Mirafra analyzed the requirements and identified the lead to kick off project.
- Mirafra was appreciated on multiple instances on Delivery Excellence and one time Milestone Achievements
- Enhanced the team to large extend and continuing in multiple projects delivery at client.
- Created comprehensive test cases to cover different aspects of the MCAL driver's functionality, including initialization, data transfers, interrupt handling, and error conditions.
- Execute the developed test cases on the target hardware with the MCAL driver integrated. Monitor and record the results, including the observed behavior, timing, and any detected issues or failures