Abstract

Automotive electrical systems continue to increase in complexity with growing number of electronic control units (ECUs) implemented in vehicles towards adding more user centric features, adaptability towards the forthcoming updates and safety regulations. Thus , a high bus speed, stable, reliable, and safe communication is required between ECUs to achieve the best performance .

To Ensure the proper functioning of each ECUs and proper communication between ECUs different test cases are performed on phycial layer and Communication layer of ECUs . Several Generic Test Cases are also performed at Bench Level and vehicle Level for proper functioning of ECUs.

CAPL stands for Communication Access Programming Language .In modern automotive vehicle with electronic control unit, CAPL is used to control test , measurement operation and module simulation.

The scope of project includes the development of CAPL code for Automation of Generic Test Cases in Vehicle . These Test Cases includes

1. Reading Diagnostic Trouble codes on ignition cycle and High bus Load
2. Reading Cycle Time of Message Frames
3. Checking Initial Values of Signals on Ignition On
4. Checking Error Frames on High Bus Load
5. CAN Bus Recovery after Short Circuit

As number of ECUs are increasing rapidly , Automation of General Test cases will decrease the time required for In – Vehicle Testing and also reduce the inaccuracy which occur during manual checking of DTC and cycle time of Message Frames .