Phanish Tangri

Software Engineer at ZF TRW

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Summary

I have around 9 years of experience in Automotive software development (Application Layer) for Electric power steering system in accordance with ASPICE process and have worked in ENG5, ENG6 and ENG9. I have been involved in analysing the received requirements for correctness and testability and then developing the requirement specifications using UML approach (Rhapsody), Simulink or Stateflow depending on the suitability. I have also written Embedded C software in "Application layer" to implement the requirements derived and then developed the test specifications for the software components to validate them against the requirements for ensuring full coverage and traceability. I am familiar with Automotive SPICE and ISO 26262.

Experience

Software Engineer at   ZF TRW

November 2010 - Present (6 years 5 months)

TRW is tier-1 supplier of Electric Power Steering System to very prestigious Vehicle Manufacturers like VW, FORD, FIAT, GM.I am working in the "Application Layer" of "Software Subsystem" of the overall "Steering System".

Software is developed following the ASPICE process and I have worked in a number of different areas in the "Software Team".

1) In developing software components in the Application layer (Software Design ENG.5 and Software Construction ENG.6 of ASPICE) of the software. For example the components where we process the Vehicle speed received on CAN or transmit the Steering angle and torque after processing. Also the component where we limit the assistance torque on the basis of Supply Voltage, Ignition state and Engine State. For developing these components I have used Rhapsody and Tasking Compiler.

2) In designing of Torque Overlay Features like Dynamic Steering Torque, Lane Assist and Park Assist, using Stateflow and Simulink. I have been involved in developing the following components.

a) CAN signal interface for the above features.

b) Signal processing interface where we check the validity of signals received so as to be used by the Mode Manager.

c) Mode Manager state machine, where depending on states EPS applies or rejects the torque request received via CAN.

3) I also work in testing the fully integrated software (ENG.9) on complete EPS system using HIL rig to ensure that the overall software meets the "System Requirements" specified in ENG.2.

4) I have been involved in FMEAs for various Software Components using IQ and SCIO tool.

5) I am well versed in using Configuration management tools like AllChange and Integrity.

  - Keywords: SCM (Software Configuration Management), FMEA, CAN, MISRA C, SIL tests, UML, ISO
   26262.

  - Tools: DOORS, IQ-FMEA, Simulink, Rhapsody, CANape, CANalyser, TASKING, VectorCAST, QAC

Software Engineer at   Tech Mahindra (formerly Mahindra Satyam)
August 2007 - October 2010 (3 years 3 months)
  Worked as an "Embedded Test Engineer" for "Electric Power Steering System" in BANGALORE, INDIA.
  Project Description:
  The EPS system provides power assistance to the steering system of a vehicle by means of
  an electric motor coupled to the steering system. The primary purpose of the software in the ECU
  of EPAS system is to control the electric motor to provide the correct level of torque at any
  instant to deliver the appropriate level of power assistance. If any fault arises in the system, the
  power assistance will be removed in a very short time and the vehicle steering will revert to a
  manual (i.e. not assisted) mode. If main microprocessor is unable to operate correctly, then safety
  microprocessor will put the steering system into a safe state.

  This project involves the following verification and validation activities:
  1) SFIT (Software Fault Insertion Testing)
  2) FT (Functional Testing)
  3) PIL (Processor In loop Testing)

  I was respomsible for the following
  1) Preparation of SFIT Test specifications, Test Schedules, test scripts and carrying out
  testing on Sealed Prototype EPS Units
  2) Writing PIL test scripts for the Processor in Loop testing.
  3) Requirement Analysis and clarifications.
  4) Preparation of test report and issue list.
  5) Designing CAPL test scripts for CAN Message Faults Testing.

  Tools Used :Vector CANape 6.1, Vector CANalyzer 7.0, Free scale CodeWarrior 8.0, PIL, Oscilloscope and
   FORD Diagnostic Tools.

Skills & Expertise
Requirements Analysis
XML
Embedded Systems

Core Java
Oracle
Software Development
PL/SQL
Software Engineering
Java
C
Business Analysis
Agile Methodologies
Testing
SDLC
C++
SQL
Unix
Software Project Management
Embedded Software

Education

Coventry University

Master's degree, Systems and Control, 2014 - 2016

Grade: A

Uttar Pradesh Technical University

Bachelor of Technology (B.Tech.), Electronics and Instrumentation Engineering, 2003 - 2007

Grade: A

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Linked in

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