

## Safety Analysis for ASIL B and C Compliant ECU based on multiple Micro-controllers.

### Objective

The client requested both qualitative and quantitative analysis of the software. Our Functional Safety (FuSa) team determined that a set of safety analysis activities would be applicable and has to be performed.



### Result

Safety functional activities were scheduled in accordance with ASIL B & C, which involved the creation of a safety plan. The designated software implementations for the ECUs were developed that additionally had to comply with safety standards in accordance with ISO26262, NCAP and FMVSS.

Our team conducted a System Failure Mode and Effects Analysis (FMEA) and performed safety analyses aligned with ASIL B & C. This as well ensued some best practices approach encompassed:

- Software Failure Mode and Effects Analysis (FMEA)
- Fault Tree Analysis
- Static Analysis

### Challenges

While engaged in the development of an automotive ECU, our client recognized the necessity for achieving ASIL B & C compliance. The intended application of the module within the vehicle system designated it as a safety-critical component.

Putting in place the necessary procedures, enlisting the services of ISO 26262 consultants, procuring licenses for tools qualified under ISO 26262, and training the engineering team according to the ISO 26262 standard would result in an increase in project expenses and a prolongation of the time-to-market.

### Solution Highlights

With the required tools such as Polyspace, CANoe among other tools, our teams were able to perform the safety analysis of the ECU software components involved in the compliance system with ASIL Band C processes. Besides, our teams were successful in the testing functionalities and provide qualified outcome for the safety parameters which were in scope.