

SUCCESS STORY

# FuSa Qualification of an Automotive SoC

PER ISO 26262 FuSa REQUIREMENT





## INTRODUCTION

A US-based technology leader specialising in data conversion, signal processing and power management technology approached Ignitarium for gap analysis, implementation of remedial actions and qualification of digital IP components required for an ISO 26262:2018 ASIL-D compliant microcontroller.

The new SoC is aimed to be used as a battery management controller for the Electrical Vehicles (EV) market. The SoC is aimed to be ASIL-D compliant.

### Service in Focus

## SEMICONDUCTOR DESIGN SERVICES



#### Industry

Automotive – Functional Safety (FuSa)



#### Challenge

Automotive SoC Architecture and FuSa Compliance



#### Scope

- Development of digital IP components required for an ISO26262:2018 ASIL-D compliant microcontroller
- Qualification of digital IPs to meet ISO26262:2018 ASIL-D requirements

## THE CHALLENGE

Ignitarium was chosen to determine the gaps in functional safety requirements of a large set of digital IPs developed by the customer / suppliers in a very short span of time. Remedial actions were implemented for all IPs, and final qualification and inspection audit were performed to ensure the IPs meet ASIL-D compliance level.





## IGNITARIUM'S APPROACH

- Ignitarium, through its deep expertise in Automotive processor-based designs, initiated a study of the RTL, DV coverage summary, and of the existing structural and functional FMEA reports to identify the gaps. The team also examined the HARA and specified safety goals.
- DFMEA for IPs based on the component & safety requirements was prepared
- Requirement traceability was updated. The Functional Safety Concept, Functional Safety Requirements and Technical Safety Requirements were defined
- Next, the verification plan with requirement and specification traceability along with safety analysis and verification report were updated
- Fault tree analysis (FTA) and its verification report were prepared
- The RTL was then updated in compliance with functional safety, component verification infrastructure to achieve 100% coverage
- A final design review was done by an external inspector to qualify the IPs to ISO 26262 ASIL-D

## FPP

Fixed price engagement executed in three tranches



External inspector qualified the IPs to ISO 26262 ASIL-D

## BUSINESS IMPACT

### 16 IPs Qualified

in just 7 months, as per ISO 26262 functional safety requirement



Ownership mode of execution with minimal intervention required from customer



Niche expertise in FuSA analysis, implementation and inspection all under one roof

**Looking for SoC Design and Verification services?**

Drop us a line to contact our experts.