ignitarium
Spark On.

6 Things to Get Right in Functional Safety Architecture for Automotive Chip Design

About this Checklist

Functional Safety Architecture is about defining the hardware and software safety mechanisms to be implemented to detect random hardware failures.

Defining an optimal Functional Safety Architecture in accordance with **ISO 26262** for an **automotive SoC** in a safety critical application is one of the main challenges faced by architects.

Read through this e-book for aspects that drive the decisions made by a system / SoC architect in arriving at an optimal Functional Safety Architecture.

Functional Safety Architecture Checklist

- ▢ **CPU Implementation** - A proper safety implementation for the CPU, to achieve the required ASIL target.
- ▢ **Third-Party IP Selection** - Third-party IPs that are safety certified and provide the safety deliverables as part of the IP package.
- ▢ **Bus Interconnect IP implementation** - The bus interconnect IP is one of the most crucial IPs in an SoC in terms of the size and complexity. For safety critical applications, it becomes necessary to have the right safety logic added to the interconnect IP.
- ▢ **Logic BIST (LBIST) / Memory BIST (MBIST)** are DFT test structures inserted for manufacturing tests. These can also be used for achieving higher runtime diagnostic coverage compared to software-based tests.
- ▢ **Custom IPs** developed for the SoC that follow the safety development process and are needed to implement required safety mechanisms and error injection logic.
- ▢ **Functional Safety Monitor** to respond to/consolidate/report safety events happening within the chip.

Defining the most optimal Functional Safety Architecture for an SoC is not just about integrating safety certified CPUs, third-party IPs and implementing standard safety mechanisms. An in-depth analysis of the safety mechanisms, alternatives available and their impact on power / performance / area is needed to arrive at the most optimal Functional Safety Architecture for an SoC.

ignitarium
Spark On.

Looking to engineer Functional Safety (FuSa) into your ASIC / SoC / Product?

Are you worried that compliance with automotive functional safety is going to slow down your implementation, hence increasing the time-to-market of your next SoC?

Our VLSI engineers have spent several years in research, design and implementation of the ISO 26262 standard and have successfully enabled Automotive Safety Integrity Level (ASIL) B / D for multiple customer SoCs.

We want to help you come up to speed so that you don't have to get into the nitty-gritty of the standard.

Schedule a complimentary consultation with our experts to see how we can help you with Functional Safety implementation for your next Automotive product.

Together, we can chart your path forward.

Here's what you will walk away with:

1. An approach for ISO 26262 certification for IP/SoC
2. Clarity on what areas of Functional Safety is key for your SoC
3. Process/Design/Verification requirements for Functional Safety

SCHEDULE A COMPLIMENTARY CONSULTATION