Product Information

CrossCom Safety IP Design Package

Overview

Functional safety related software and hardware require a certain safety integrity level. To achieve SIL3 typically 2 MCUs with mutual synchronization and monitoring are used (*1-out-of-2-Architecture*).

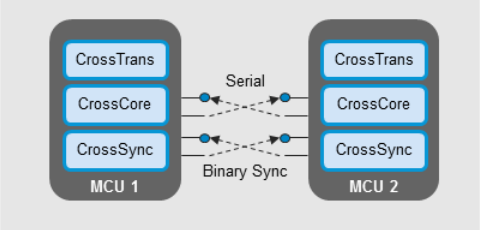

Fig. 1: Typical CrossCom Architecture

The CrossCom Safety IP Design Package is the central software component in such architecture.

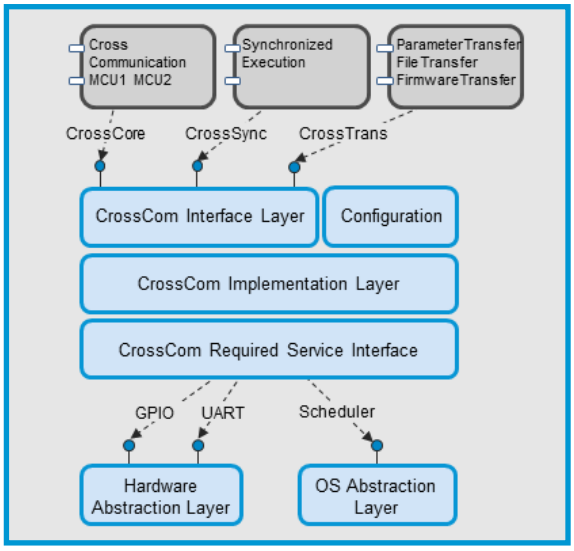

Fig. 2: CrossCom Layer Overview

Technical Description

This Design Package is the relevant component for exchanging data between two microcontrollers in a redundant SIL3 core architecture. It offers clear software interfaces, it is encapsulated and tested.

It mainly provides

- Timing synchronization of two microcontrollers for mutual monitoring
- Symmetric and asymmetric message exchange between two redundant microcontrollers for mutual monitoring
- Handling of data exchange for Safety Ethernet Communication with Black Channel technology

Your Benefits

- Design Package directly useable in SIL3 related projects
- Reduced development risk through reuse
- Saving on development by using proven architecture
- Cost and risk reduction of the project
- Shorter time-to-market through effort reduction
- Easier product certification due to IEC based documentation

Delivery Content

- SW design description (Polarion)
- Source code (IEC 61508 compliant, C99 MISRA-C 2012)
- Test documentation: test cases and test reports (Tessy)
- Code documentation (Doxygen)
- Static code analysis results (PC Lint)
- All documentation according to IEC 61508 standards

Software and hardware requirements

- Failure Handler (Interface)
- UART (Interface)
- GPIO (Interface)
- Opt. scheduler for asynchronous evaluation of messages
- Asynchronous communication interface needed (HW abstraction)
- Ring buffer for incoming message data
- Bulk data transfer for transmission
- 2 digital lines between microcontrollers
- Designed and optimized for STM 32-Bit microcontroller

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