

Software library designed for use in automotive ASIL B applications

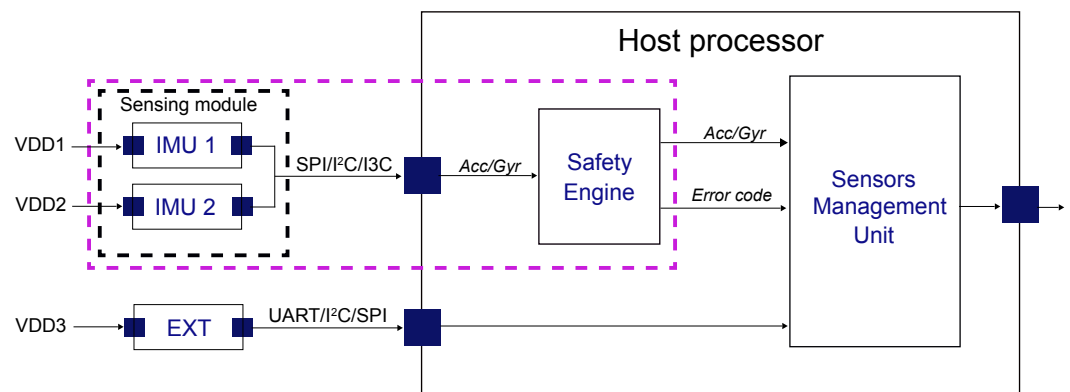
Features

- Developed according to ISO26262 for systems with safety targets up to ASIL B
- Compliant with MISRA C guidelines
- Robust software safety mechanisms
- Platform independent
- Low memory footprint
- Easy integration

Description

ST offers a solution suitable to be adopted in automotive ASIL B applications, based on two identical ASM330LHBxx inertial measurement units (IMU 1 and IMU 2) as well as the ASILB-LIBRARY software library, indicated as "Sensing module" and "Safety Engine", respectively, in Figure 1.

Figure 1. Example of reference application for identification of failure modes



The ASILB-LIBRARY interfaces a sensing module, composed of two IMUs, with a host processor. Interfacing the module entails:

1. Configuration of the sensing module
2. Check of the sensing module before starting to acquire data
3. Acquisition of the data coming from the sensing module

Each of the steps above is associated to an error code, warning the user of improper function of the module.

The reason for having a module composed of two identical sensors is to implement redundancy mechanisms, checking that the data coming from two different sensing sources are consistent.

The library is platform independent and can be customized according to the user's target microcontroller. ST compiles the libraries based on design requirements obtained from an online registration form, returning the following resources to the user:

- ASM330LHBxx ASIL B library in binary format
- Unit and integration testing library in binary format
- Embedded software testing guidelines
- Integration manuals and release notes of the libraries

Revision history

Table 1. Document revision history

Date	Version	Changes
02-Mar-2023	1	Initial release
05-Apr-2023	2	Updated Figure 1 and Description

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