

BLUEWIND iMCAL SOFTWARE FRAMEWORK FOR INDUSTRIAL SAFETY APPLICATIONS

Bluewind iMCAL is an engineering Software Framework specifically designed for Industrial applications, serving as the foundation for developments with Functional Safety requirements aligned with IEC 61508 and other domain-specific industrial standards.



iMCAL SOFTWARE FRAMEWORK

- Bluewind iMCAL Software Framework groups a set of building elements related to the Microcontroller (libraries, modules and standardized practices) to facilitate the development process of safety projects in the industrial field.
- Bluewind iMCAL Software Framework enables industrial safety development to reach qualification at a reduced cost and time to market.

WHERE TO USE iMCAL

Products related to IEC 61508, EN 13849 and EN 60730 can benefit from the usage of iMCAL, that find application in various industrial scenarios including:

- Off-highway vehicles and cranes
- Construction equipment and forklifts
- Industrial plants and excavators
- Stationary battery management systems
- Marine steering systems
- Light electrical vehicles, and more

BLUEWIND iMCAL FEATURES

What iMCAL Provides

Bluewind iMCAL Software Framework provides a combination of software, tools templates, and documentation that enable safety certification:

- Software modules
- Software wrappers for existing drivers
- Tailor-made safety drivers
- Module design documentation compatible with industrial safety standard
- Templates for unit testing and static analysis report on the modules
- FMEA templates for existing drivers
- SW requirements templates in ReqIF format
- Documentation

Full RTOS Compliance

Combined with a safety-qualified real-time operating system, Bluewind iMCAL allows for an additional reduction in the safety process complexity.

Programming Language

The software modules provided by Bluewind iMCAL are written in both C and Rust, as a preferred alternative programming language in the context of functional safety.

Supported Microcontroller Families

Bluewind iMCAL Software Framework currently supports Microcontroller families such as:

- Infineon AURIX TC2xx / TC3xx
- STMicroelectronics STM32



RELIABLE ROADMAP

It provides a structured and a reliable roadmap to the product safety qualification, and expedites qualification processes at a reduced cost and time to market.



COMPLIANCE

It supports multiple Industrial Microcontrollers and it is designed for a fully compliant safety development process, utilizing tools and methodologies approved by competent bodies.



SAFETY INDUSTRIAL

It can be utilized across a range of applications within IEC 61508, EN 13849 and EN 60730 standards.

