



IAR Embedded Workbench for Functional safety

Simplified validation with pre-certified solutions

Functional safety is one of the most important features in many embedded systems today, especially with in sectors such as automotive, industrial automation and medical. To be able to build applications with ensured functional safety, you often need to provide extensive documentation for selecting a particular toolchain and to prove that you are compliant with specific requirements in your sector. By choosing a pre-certified solution, you will save both time and cost which enables you to focus more on your code and the features of the application. We provide certified editions of IAR Embedded Workbench and IAR Build Tools. For Arm and RISC-V, the IAR Build Tools are available with cross-platform support for Linux (Ubuntu and Red Hat) and Windows.

Certified by TÜV SÜD

IAR Embedded Workbench is a complete C/C++ compiler and debugger toolchain, providing one single toolbox for embedded software development. The functional safety edition of our tools are certified by the safety-accredited certification body, TÜV SÜD, as qualified for development of safety-related applications according to the mentioned standards. By selecting IAR Embedded Workbench, functional safety edition, as a development tool, you do not have to evaluate the tool development process yourself and also not demonstrate language standards compliance by your own testing. This has already been taken care of by TÜV SÜD. The same applies to the functional safety editions of IAR Build Tools.

The certified editions enable simplified validation of your application thanks to the included Functional Safety certificate from TÜV SÜD, Safety report from TÜV SÜD and Safety guide.



Broad coverage of standards

| | Industrial IEC 61508 | Automotive ISO 26262 | Railway EN 50128 EN 50657 | Medical IEC 62304 | Agriculture & forestry ISO 25119 | Machinery control ISO 13849 IEC 62061 | Process industry IEC 61511 | Household appliances IEC 60730 |
|---------------|-------------------------|-------------------------|---------------------------------|----------------------|--|--|----------------------------------|--------------------------------------|
| Arm | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| RISC-V | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Renesas RX | ✓ | ✓ | ✓ | ✓ | | | | |
| Renesas RL78 | ✓ | ✓ | ✓ | ✓ | | | | |
| Renesas RH850 | ✓ | ✓ | ✓ | ✓ | | | | |
| STM8 | ✓ | ✓ | ✓ | ✓ | | | | |

Support and maintenance as long as you need it

To ensure your application stays consistent and safe throughout its life cycle, you need a reliable toolchain. The functional safety editions of IAR Embedded Workbench and IAR Build Tools come with a special Functional Safety Support and Update Agreement, that gives you guaranteed support for the sold version for the longevity of the agreement. In addition, the tools are delivered in frozen versions, and are only updated through validated service packs.

Additionally, the included Safety Guide has practical tips for helping you certify your application, from detailing the use of the tools in a functional safety context to libraries and C/C++ programming language recommendations.

Integrated code analysis

The static analysis tool C-STAT is available with the certified editions of IAR Embedded Workbench. C-STAT is completely integrated with the toolchain and features static analysis that can detect defects, bugs, and security vulnerabilities as defined by CERT C and the Common Weakness Enumeration, as well as help keeping code compliant to standards like MISRA C:2012/2004 and MISRA C++:2008.

The runtime analysis tool C-RUN is available for Arm and Renesas RX. C-RUN performs arithmetic-checks, advanced bounds checking, heap checking, etc. By using runtime analysis, you can find potential and real errors at an early stage and minimize the impact on project budgets and deadlines.

Does your application require functional safety?

We are here to help you, all the way from project start to end of product life cycle.
What we can offer you:

- √ Tools certified by TÜV SÜD
- √ Long-term support through a special functional safety agreement
- √ Safety certificate renewal as long as agreement is active
- √ Coverage of 10 safety standards
- √ Full flexibility with wide tools support across architectures

Contact your closest IAR team to get started!