WIND RIVER DIAB COMPILER ISO 26262 QUALIFICATION KIT

ISO 26262 is a functional safety standard adapted from IEC 61508 that addresses the specific needs of automotive electronic systems. The ISO 26262 standard requires that tools used in the software development process are qualified as being safe to use in a particular project.

Wind River® has partnered with Validas AG, leveraging their expertise in software safety and quality, to define an ISO 26262 qualification kit for Wind River Diab Compiler. The Wind River Diab Compiler ISO 26262 Qualification Kit provides valuable tools and information to help customers classify their use of Diab Compiler in ISO 26262 projects. The qualification kit can also be used for projects subject to other functional safety standards.

Using customer-selected use cases for Diab Compiler, a Tool Confidence Level (TCL) is determined. The Diab Compiler ISO 26262 Qualification Kit uses a model-based process with tools developed by Validas and approved by TÜV. The overall TCL of a given tool is determined by evaluating the tool impact (TI) on safety and balancing this with the tool detection (TD) ability. Depending on the TCL and the Automotive Safety Integrity Level (ASIL), customers can use one of several methods to qualify their use of the Diab Compiler in an ISO 26262 project.

KEY FEATURES

- Diab Compiler classification and qualification guides
- Example Diab Compiler classification report
- Diab Compiler test report
- Code coverage information for compiler test suites, including Plum Hall and ACE SuperTest
- Diab Compiler Automotive SPICE® development process description
- Diab Compiler error model for use with the Validas Tool Chain Analyzer (TCA)
- Instrumented Diab Compiler for code coverage analysis

HOW IT WORKS

The Diab Compiler ISO 26262 Qualification Kit uses the Validas TCA to help customers determine the TCL for their particular use cases. This TCA tool generates a TCL report based on Diab Compiler use case selections made by the user. The TCA uses the Diab Compiler error model provided in the Wind River Diab Compiler ISO 26262 Qualification Kit. This error model includes:

- Compiler use cases
- Compiler features
- Compiler artifacts (inputs and outputs)
- Potential compiler errors
- Possible error mitigations
- Validation test cases
- Documentation generation of TCL determination

Once a TCL is determined, a customer can utilize the ISO 26262–defined qualification method that best aligns with their needs to qualify Diab Compiler for their project.

To assist in more advanced qualification methods, the Diab Compiler ISO 26262 Qualification Kit includes test reports from the most recent Diab Compiler release and allows customers to run their own code or test suites through an instrumented version of the compiler to compare their use of the compiler to a standard compiler test suite such as Plum Hall or ACE SuperTest.

In addition to the Diab Compiler ISO 26262 Qualification Kit, Wind River offers certification and tool qualification services and support to help customers with functional safety needs.

WIND RIVER COMMITMENT TO AUTOMOTIVE SAFETY

As demands related to safety in the automotive industry are increasing, Wind River continues to invest in the area of functional safety with the following Diab Compiler services, processes, and commercial offerings:

- Wind River Diab Compiler ISO 26262 Qualification Kit
- Automotive SPICE Level 2 development process
- Defect management, providing proactive alerts and access to issues affecting safety
- Wind River Diab Compiler Frozen Branch Maintenance, providing long term customized maintenance plans

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