# IAR Systems delivers advanced trace for RISC-V based applications

Enhanced support for the SiFive Insight solution in IAR Embedded Workbench brings leading debug and trace capabilities to the RISC-V community

Uppsala, Sweden—June 24, 2020—IAR Systems®, the future-proof supplier of software tools and services for embedded development, has extended the complete development toolchain IAR Embedded Workbench® for RISC-V with support for trace as implemented by SiFive Insight, the industry's first combined pre-integrated trace and debug solution for the freely-available, open-specification RISC-V ISA.

In addition to simplifying debugging and helping enforce good coding practices, trace enables extended testing and proof of code coverage, which is a requirement of several safety standards. By providing live information on code coverage and updates as the program runs, IAR Embedded Workbench enables developers to improve code quality in an efficient way.

IAR Embedded Workbench is a complete development toolchain including the highly optimizing IAR C/C++ Compiler™ and the feature-rich C-SPY® Debugger. The software is complemented by native debugging and trace probes. The debug probe I-jet supports on-chip RAM buffered trace, in addition to fast JTAG/cJTAG/DAP debug and is complemented by the powerful trace probe I-jet Trace, which can livestream trace information for code coverage and profiling purposes. The new trace features include an updated trace control and status window that provides developers with full control of all active settings and the live trace status of the application. The C-SPY Debugger will decode trace and calculate coverage and profiling as the application executes, populating the respective windows on the fly. This live update enables developers to monitor everything from the available trace buffer to the number of covered instructions. In
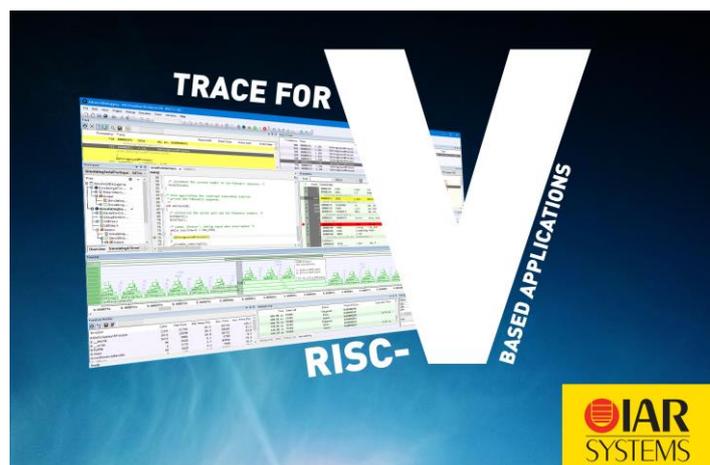
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addition, function profiling makes it possible to see and analyze timing information for the functions in an application, while code coverage analysis shows the percentage of code that has been executed down to single instruction resolution. These combined capabilities offer a non-intrusive and easy-to-use code optimization tool.

"With the expanded trace support in IAR Embedded Workbench for RISC-V, we are bringing our proven trace viewer infrastructure from other architectures into RISC-V ecosystem," said Thomas Andersson, Product Manager, IAR Systems. "We have been working closely with SiFive to ensure we make use of all features available in SiFive Insight, and thanks to the native probe support, we provide integrated development workflows where the developer is in the driver seat with full control of the application."

"IAR Systems' support for SiFive Insight Advanced Trace and Debug Solution will continue to drive adoption of RISC-V in embedded markets across the globe," said Drew Barbier, Director of Product Marketing, SiFive. "The powerful features of IAR Embedded Workbench, including C/C++ Compiler, C-SPY Debugger, and instruction trace profiling, take full advantage of SiFive's RISC-V processor portfolio and Insight trace and debug to enable the next-generation of embedded product development."

Launched in 2019, IAR Embedded Workbench for RISC-V provides excellent optimization technology, helping developers ensure the application fits the required needs and optimize the utilization of on-board memory. This also enables companies to aggregate value by adding functionality to an existing platform. To ensure code quality, the toolchain includes the static analysis tool C-STAT®, which proves code compliance with specific standards like MISRA C:2004, MISRA C++:2008 and MISRA C:2012, as well as detect defects, bugs, and security vulnerabilities as defined by the Common Weakness Enumeration (CWE) and a subset of CERT C/C++.

The current version of IAR Embedded Workbench for RISC-V provides support for RV32 and RV32E 32-bit RISC-V cores and numerous ISA extensions such as C for compressed instructions, and F and D for single-precision and double-precision floating points. Future releases will enhance debug and trace capabilities following RISC-V standardization efforts. Complementing its strong tools product offering, IAR Systems delivers outstanding technical support from offices around the globe. Learn more at www.iar.com/riscv.

<center>**### Ends**</center>

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About IAR Systems

IAR Systems supplies future-proof software tools and services for embedded development, enabling companies worldwide to create the products of today and the innovations of tomorrow. Since 1983, IAR Systems' solutions have ensured quality, reliability and efficiency in the development of over one million embedded applications. The company is headquartered in Uppsala, Sweden and has sales and support offices all over the world. Since 2018, Secure Thingz, the global domain expert in device security, embedded systems, and lifecycle management, is part of IAR Systems Group AB. IAR Systems Group AB is listed on NASDAQ OMX Stockholm, Mid Cap. Learn more at www.iar.com.