Together we are faster:

Accelerated runtime analyses facilitate software development

November 15, 2022 – Safety-critical applications with real-time requirements need worst-case program runtimes to be estimated. A novel solution from leading tool specialists Lauterbach and AbsInt makes such runtime analyses even faster and easier.

The earlier in the development process software errors are discovered, the more efficiently they can be fixed. In the development of embedded systems, methods such as real-time tracing are essential. For many decades, Lauterbach's PowerTrace modules have been the market leader for real-time tracing in the embedded industry, providing highly detailed information about the program flow, interrupts, and task switches.

Retrieving and analyzing this data is the basis for AbsInt's tool TimeWeaver, which uses the measured execution times of code sections from real-time tracing to determine the most reliable estimate of the worst-case execution time (WCET).

"Thanks to our excellent cooperation, WCET analyses are now more viable for more complex processors", says Dr. Christian Ferdinand, managing director of AbsInt Angewandte Informatik GmbH.

"Developers of embedded software can now reach their goals even faster by utilizing data from our real-time traces for static WCET analyses", explains Norbert Weiss, managing director of Lauterbach GmbH. "The joint solution with AbsInt represents a major improvement in the development of safety-critical applications, especially those with real-time requirements."

In close cooperation between the two companies, the memory requirements for the exchanged data have now been dramatically reduced through compression and innovative optimization, which means that TimeWeaver delivers its results significantly faster, while requiring less memory.

The combination of PowerTrace and TimeWeaver supports all current CPU architectures, even complex heterogeneous SoCs, with the fastest trace tools in the industry, suitable for all embedded projects where WCET runtime analysis is required.

About AbsInt

AbsInt provides state-of-the-art development tools for embedded systems with a focus on validation, verification and certification of safety-critical and safety-relevant software. Key products include static analysis tools for the verification of coding guidelines, timing and stack usage analysis, and detection of critical programming errors in C/C++ code, as well as the formally verified compiler CompCert. Recently, the development of CompCert was honored with the prestigious ACM Software System Award: https://awards.acm.org/software-system.

AbsInt was founded in 1998 and is a privately held company based in Saarbruecken, Germany. Our customers come from 40+ countries around the world and from various industries, including aerospace, automotive, medical and energy – see https://www.absint.com/success.htm.

For more information, visit www.absint.com.

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About Lauterbach

Lauterbach is the leading manufacturer of cutting-edge development tools for embedded systems with more than 40 years of experience. It is an international, well-established company, serving customers all over the world, partnering with all semiconductor manufacturers and growing steadily. At the headquarters in Hoehenkirchen, near Munich, the engineering team develops and produces highly proficient and specialized, easy-to-use Development Tools. Branch offices in United Kingdom, Italy, France, Tunisia, on the East and West coasts of the United States, Japan and China and highly qualified sales as well as support engineers in many other countries make Lauterbach's full product range available worldwide. For more information please visit http://www.lauterbach.com/

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