Lauterbach Collaborates with Wind River to Deliver Support for the Full Portfolio of Wind River Operating Systems

Hoehenkirchen-Siegertsbrunn, February 2015 – Lauterbach, the leading manufacturer of microprocessor development tools, and Wind River, a global leader in software for intelligent connected systems, are working together to ensure interoperability between all Wind River operating systems and the comprehensive debuggers built by Lauterbach.

TRACE32®, the in-circuit debug and trace solutions of Lauterbach will support all new releases of Wind River operating systems, including the latest Wind River Linux, VxWorks (including Virtualization Profile), and VxWorks 653 platforms. In cooperation with Wind River, Lauterbach has begun efforts to build “OS Awareness” functionality, targeting all architectures that Wind River supports, e.g. Intel x86/x64, Power Architecture, ARM (Cortex), MIPS etc. The close collaboration of both companies ensures a tight alignment of the tool versions. As new OS versions are released, an appropriate debug solution will also be available. By the end of the year, the TRACE32 tool family will also provide support for older versions of Wind River OSes.

The TRACE32 debugger provides a dedicated OS awareness for each Wind River OS platform. After loading the awareness function, the debugger displays tables of all OS objects, such as tasks and semaphores, and gives detailed information of each object. In addition, stack coverage provides an overview of how much stack each task consumed. The interpretation stack frame itself shows the call hierarchy of each task, including the service call that led to the pre-emption of a task. To gather all this information, the debugger simply reads and interprets target memory, without using any target resident software. Thus, the debugger does not change the target state in any way nor does it rely any special target side debug routines. Being a hardware-based debugger, TRACE32 halts the whole system when running to a breakpoint. Customers will be able to inspect the state of the system and continue the target from the same state as it was stopped.

As such, the user is able to debug all parts of the target software, including boot loader, kernel routines, interrupt handlers, device drivers, kernel modules, user processes and libraries. Moreover, users can debug all of these simultaneously, which allows easy debugging of software interfaces, interprocess communication and other messaging services.

The TRACE32 debugger contains a deep MMU support for the used CPU and OS. Knowing the layout and position of MMU tables, the debugger is able to interpret virtual addresses on its own, independent to the current CPU state. Thus, the developer can access code and variables of each process in the system, regardless if it is currently mapped to the hardware MMU, or not. The developer gains access to all processes at the same time. TRACE32 provides this support for WR Linux processes, as well as, VxWorks RTPs.

TRACE32 can support Wind River virtualization offerings. The debugger separates the special CPU access modes, usually called “hypervisor mode” and “guest mode.” Both modes can be debugged simultaneously, e.g. setting a breakpoint in the hypervisor code, while single stepping in the guest OS. Loading an awareness for both, the hypervisor and guest OS, is even possible as well.

If the CPU includes an interface for real-time tracing (e.g. ARM ETM, or PowerPC NEXUS), Lauterbach also provides a tool to record this trace. With this recording, TRACE32 can create comprehensive performance analysis on task run times, function run times, or function call trees. Using these capabilities, it's easy to find bottlenecks, time consuming code sections, or unexpected task transitions; all while the real application runs on real hardware. Because TRACE32 records the whole program flow, it's also able to create a code coverage analysis. This analysis can be made on the function or source code level, or even on the object code level. By exporting this information to various file formats, external tools can perform additional analysis, e.g. to check the results against requirements and specifications.

The TRACE32 awareness for Wind River platforms comes with no extra cost. Existing or new TRACE32 customers can immediately benefit from the added functionality without the need for a supplementary purchase.

Visit Lauterbach at the "embedded world 2015" exhibition in Nuremberg, Germany, hall 4, booth 4-210 and view demonstrations of TRACE32 capabilities in combination with Wind River operating systems.

About Lauterbach

Lauterbach is the leading manufacturer of complete, modular and upgradeable microprocessor development tools worldwide with experience in the field of embedded designs since 1979.
It is an international, well-established company with blue chip customers in every corner of the globe and has a close working relationship with all semiconductor manufacturers. At the headquarters in Höhenkirchen, near Munich, the engineering team develops and produces highly proficient and specialized Development Tools, which are utilized all over the world under the brand TRACE32®. Own branch offices exists in United Kingdom, Italy, France, Tunisia, on the East and West coasts of the United States, Japan and China. Highly qualified sales and support engineers are also available in many other countries. For more information visit http://www.lauterbach.com/

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