Green Hills Software Announces Support for Multicore ARM Processors with Its Field-Proven INTEGRITY-178 tuMP High-Assurance Multi-Level-Secure Real-Time Operating System

Richland Technologies offers FACE V2.0 Technical Standard Aligned Cortex-A9-based Multicore Avionics Computer, Middleware and Driver Software Optimized for INTEGRITY-178 tuMP

SANTA BARBARA, CA — April 9, 2014 — Green Hills Software, the proven worldwide leader in FAA/EASA and NSA-certified high-assurance operating systems, today announced the availability of its INTEGRITY-178 tuMP™ real-time operating system (RTOS) for ARM®-based processors. Green Hills Software partner Richland Technologies also announces the industry’s first Open Standard Reconfigurable and Certifiable Computing Architecture (ORCCA) avionics computer based on an ARM multicore processor and INTEGRITY-178 tuMP.

The INTEGRITY-178 tuMP (time-variant unified multiprocessing) RTOS is intended for safety-critical and security-critical systems that are based on modern multicore processors. INTEGRITY-178 tuMP significantly improves the flexibility in how the ARM processor cores can be used. The tuMP architecture is referred to as “unified” in that a common OS controls the scheduling of all cores and the overall communications between applications. It retains all AMP and SMP scheduling capabilities while resolving their significant limitations. The introduction of tuMP for ARM-based processors follows the successful introduction in 2011 of INTEGRITY-178 tuMP for Freescale’s family of QorIQ multicore processors. In addition to a proven 3-year product service history on QorIQ multicore processors, the tuMP implementation is an update to Green Hills Software’s INTEGRITY-178 single-core product, preserving 12 years of safety and security assurance pedigree and product service history. INTEGRITY-178 tuMP for ARM also supports the ARINC-653 (Part 1 supplement 3 and Part 2 supplement 2) interfaces and
operating system capabilities necessary to be aligned with the Future Airborne Capability Environment (FACE™) V2.0 Technical Standard. For systems requiring compliance to RTCA/DO-178B/C, Green Hills Software provides Level A certification evidence for INTEGRITY-178 tuMP. Green Hills Software is the world’s only safety-critical RTOS company that uses its own engineering and certification staff to both develop the product from the ground up and provide DO-178B/C Level A certification services and evidence for its RTOS and custom Board Support Packages (BSP).

After many successful avionics development and certification projects based upon PowerPC architectures, Richland Technologies designed and built their innovative new ARM-based ORCCA avionics computer to satisfy severe Space, Weight and Power (SWaP) requirements. Leveraging the industry-leading multicore features and certification pedigree of INTEGRITY-178 tuMP, Richland’s CortexTM-A9-based ORCCA platform offers dual redundant, low-power, high-performance processing and graphics capability, with flexible I/O configurations. The availability of INTEGRITY-178 tuMP for ARM allows Richland Technologies to offer seamless portability of the DO-178B/C-certifiable ORCCA software platform (device and I/O drivers, middleware and FACE 2.0 Technical Standard-aligned software applications) between QorIQ and Cortex-A9-based platforms.

INTEGRITY-178 tuMP is available immediately for ARM Cortex-A9 processors and is supported by Green Hills Software’s MULTI®/AdaMULTI™ integrated development environment (including optimizing C, C++ and Ada compilers). For more information, contact 1-800-789-9695 or internationally at +1-727-781-4909, or by email: HighAssuranceRTOS@ghs.com.

About Green Hills Software
Founded in 1982, Green Hills Software is the largest independent software vendor for the Internet of Things. In 2008, the Green Hills INTEGRITY-178 RTOS was the first and only operating system to be certified by NIAP (National Information Assurance Partnership comprised of NSA & NIST) to EAL 6+, High Robustness, the highest level of security ever achieved for any software product. Our open architecture integrated development solutions address deeply embedded, absolute security and high-reliability applications for the military/avionics, medical, industrial, automotive, networking, consumer and other markets that demand industry-certified solutions. Green Hills Software is headquartered in Santa Barbara, CA, with European headquarters in the United Kingdom. Visit Green Hills Software at www.ghs.com.

About Richland Technologies
Richland Technologies (RTL) is an innovator in the field of high performance, small form-factor, safety critical and cost effective embedded systems for the commercial and defense aviation industries. RTL leverages a creative portfolio of disruptive technologies to make leading edge applications available to cost sensitive pilots and system operators. RTL offers a comprehensive portfolio of engineering and management services focused on projects requiring DO-178B/C and DO-254 certification.
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