

CONTACT:

Adam Simpson
Media and Marketing Manager
Phone: (678) 929-4240
Mobile: 678-591-7364
adam.simpson@richlandtechnologies.com

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RICHLAND TECHNOLOGIES LAUNCH INDUSTRY'S FIRST SOFTWARE-BASED MULTICORE GRAPHICS SOLUTION

- *RTGL SoftPipe developed using Green Hills Software's INTEGRITY-178 tuMP RTOS*

LAWRENCEVILLE, GA, USA, November 4, 2015 --- Richland Technologies LLC (RTL) is proud to announce the launch of RTGL SoftPipe, the aviation industry's first DO-178C certifiable, purely software-based multicore graphics solution that eliminates the need for dedicated graphics hardware.

RTGL SoftPipe has been developed using Green Hills Software's INTEGRITY-178 tuMP (time-variant unified Multi-Processing) Real-Time Operating System. The decision to collaborate with Green Hills Software, the proven worldwide leader in FAA/EASA and NSA-certified high-assurance operating systems, was not a difficult one according to Dave Simpson, Managing Director of Richland Technologies.

"The key to obtaining high performance is the use of multiple cores with today's high end CPUs, while taking into account safety critical and CAST-32 multi-core certification requirements for this type of application," he said. "The only operating system that supported all our requirements was INTEGRITY-178 tuMP."

INTEGRITY-178 tuMP provides best-of-class flexibility in configuring how cores can be allocated for different use scenarios. Integration with INTEGRITY-178 tuMP enables: a single core to be dedicated to SoftPipe; sets of cores to be dedicated to SoftPipe for specific time periods; SoftPipe to share cores with an application; or even the sharing of different cores with different applications at different time periods. Such flexibility provides support for usage scenarios that are not possible with COTS Graphics processors (GPUs).

"Green Hills Software is excited to be working with an embedded graphics software partner that shares our commitment and dedication to DO-178B/C Level A compliance for its embedded software products," said Dan O'Dowd, founder and chief executive officer of Green Hills Software. "Richland Technologies' experienced aviation industry staff combined with their innovative graphics solutions enables Green Hills Software to recommend safety-critical graphics products that our customers can rely on, especially when it comes to DO-178B/C certification claims."

RTGL SoftPipe is a high performance, small footprint OpenGL library designed to render highly complex 3D graphics in safety-critical embedded systems.

“Hardware certification requirements (DO-254/ED80) present huge challenges when using a graphics processing unit, but SoftPipe is the ideal solution to this,” said Mike Micek, Richland Technologies’ Senior Graphics Development Engineer.

“It uses a deterministic, processor architecture-independent model optimized for any INTEGRITY-178 tuMP multicore based platform to maximize performance and minimize power usage.”

SoftPipe uses industry standard OpenGL API specifications that are compatible with most new and legacy applications, but it can also be completely tailored to meet any customer requirements.

The Green Hills Software INTEGRITY-178 tuMP multicore operating system has been shipping to Green Hills’ aerospace and defense customers since 2011. It builds upon a proven fourteen-year service history and certification pedigree by incorporating multicore operating system capabilities, including support for AMP and SMP. INTEGRITY-178 tuMP defines groupings (called affinity groups) of how cores will be utilized by one or more applications, with the grouping of cores and applications being permitted to vary over time.

INTEGRITY-178 tuMP offers complete support for the ARINC-653 Part 1 standard as well as Part 2 optional features such as Sampling Port Data Structures, Sampling Port Extensions, Memory Blocks, Multiple Module Schedules and File System. INTEGRITY-178 tuMP also aligns with the FACE™ 2.1 Safety Base and Security profiles. Green Hills Software’s INTEGRITY-178 tuMP is intended for safety- and security-critical systems that require total software reliability, absolute security and guaranteed deterministic behavior. It is available for Freescale QorIQ, Intel and ARM multicore architectures.

For more information on Green Hills Software INTEGRITY-178 tuMP, please visit http://www.ghs.com/products/safety_critical/integrity-do-178b.html/

RTGL SoftPipe is available immediately. To find out more, please contact visit our website at richlandtechnologies.com/products/rtgl/software-renderer/ or email info@richlandtechnologies.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. For more information, visit www.richlandtechnologies.com or follow us on Twitter @R_Technologies.

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. Green Hills Software is headquartered in Santa Barbara, CA, with European headquarters in the United Kingdom. Visit Green Hills Software at www.ghs.com/.

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 @R_Technologies  Richland Technologies

Richland Technologies, LLC
1755 North Brown Road—Suite 150,
Lawrenceville, GA 30043

Web: www.richlandtechnologies.com

