

News Release

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drawElements Launches Analysis Tools Improving Graphics Driver Quality of Embedded Systems and Devices

**drawElements Quality Program puts OpenGL ES 2.0 drivers to the test;
Benchmarking of quality to improve driver robustness and reduce fragmentation in
mobile and embedded platforms**

HELSINKI, Finland – December 9, 2010 – drawElements Ltd. launches the drawElements Quality Program for OpenGL ES 2.0, a unique system for benchmarking the quality of GPUs and their drivers, on the 16th of December at SIGGRAPH Asia in Seoul. The drawElements Quality Program (dEQP) score measures correctness, feature richness, precision, and stability, which is a clear difference from other GPU benchmarks focusing on rendering performance. The first release of dEQP includes tests for OpenGL ES 2.0. More test suites for other Khronos APIs will be announced in early 2011.

dEQP benefits everyone involved in making high-end graphics a reality in the embedded space; from the GPU design team and silicon providers to the device manufacturers and application developers. GPU providers can focus their resources on differentiating activities as dEQP eases the burden of quality assurance. Device manufacturers get a better understanding of the maturity and quality of the different platforms during their selection process. Developers gain knowledge of the strengths, weaknesses, and incompatibilities of OpenGL ES 2.0 platforms, allowing them to create applications that run on a wider range of devices. Improved and known level of quality gives application programmers a more predictable environment to work in, which in turn results in consumers getting better and more reliable applications and devices.

During the development of dEQP, drawElements has subjected commercially available mobile phones to preliminary tests. The tests have validated the need for more thorough quality assurance as the tested devices invariably have issues ranging from minor graphical glitches to device crashes in more advanced test cases.

To celebrate the launch, drawElements will be distributing a free preview application, called dEQP-Mini, for Android phones. The application contains a small subset of the tests found in the commercial version of dEQP and reference scores from devices currently available in stores. For more details, please visit www.drawelements.com.

"dEQP was born from our noble plans to make the world a somewhat better place for our fellow developers. Enforcing the OpenGL ES 2.0 spec makes life easier for the developers, and also builds a healthy non-fragmented application market. We are passionate about creating high quality tests to help that happen." explains Petri Kero, CTO at drawElements.

"I'm delighted to see the appearance of a quality benchmarking program such as this. Its focus on robustness and features complements the Khronos OpenGL ES Conformance Test's focus on rendering functionality, and is a great addition to the OpenGL ES ecosystem." - Tom Olson, OpenGL ES Working Group Chair

"dEQP is something that this industry sorely needs," said Dr. Jon Peddie of Jon Peddie Research. "Mobile applications have become increasingly important for manufacturer's and operator's revenue, and so the stability and overall quality of graphics implementations has become increasingly important to them, and the users."

Tero Sarkkinen, the CEO at Rightware, said: "Rightware, the leader in graphics performance benchmarking, welcomes dEQP as a complementary solution to our de-facto standard performance benchmark tools such as 3DMark®Mobile, VGMark®, SPMark® and SimulationMark®. We also have made it easy for dEQP licensees to integrate our tools within the dEQP so that both performance and quality testing can be done easily at the same time. "

About drawElements

drawElements is a software expert company focused on computer graphics technologies for the embedded space. Our main product is the drawElements Quality Program, a benchmarking system for measuring the quality of GPUs and their drivers. Our crew has also been working on related technologies such as run-time optimized blitters, OpenGL ES 2.0 drivers and software rasterizers. drawElements is based out of Helsinki, Finland.

Further information can be found from <http://www.drawelements.com>.

About the Khronos Group

The Khronos Group is an industry consortium creating open standards to enable the authoring and acceleration of parallel computing, graphics and dynamic media on a wide variety of platforms and devices. Khronos standards include OpenGL®, OpenGL® ES, WebGL™, EGL™, OpenCL™, OpenMAX™, OpenVG™, OpenSL ES™, OpenKODE™ and COLLADA™. All Khronos members are able to contribute to the development of Khronos specifications, are empowered to vote at various stages before public deployment, and are able to accelerate the delivery of their cutting-edge media platforms and applications through early access to specification drafts and conformance tests. More information is available at <http://www.khronos.org>.

About Jon Peddie Research

Jon Peddie Research is a technically oriented marketing, research, and management consulting firm. Based in Tiburon, California, JPR provides specialized services to companies in high-tech fields including graphics hardware development, multimedia for professional applications and consumer electronics, entertainment technology, high-end computing, and Internet access product development.

About Rightware

Rightware serves mobile, automotive and the embedded industries with Kanzi™ solution for rapid 3D user interface design and deployment. Rightware also develops industry leading system performance analysis tools. The world renowned product portfolio includes 3DMark®Mobile for OpenGL ES 1.x and OpenGL ES 2.0, VGMark® for OpenVG 1.x, and SPMark® platform benchmark for Symbian, Android, Windows Mobile, Linux and mobile Java. Rightware is headquartered in Espoo, Finland and has offices in Beijing and Shanghai. More information can be found at <http://www.rightware.com>.

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