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drawElements Releases First Ever GPU Quality Market Research

HELSINKI, Finland – November 12th, 2013 – drawElements will release the world's first mobile GPU market study focusing on complete quality at the Slush startup conference. Covering aspects beyond mere performance, the report will provide unique insights into the differences between the graphics capabilities of mobile devices.

drawElements has studied the graphics processing units (GPUs) of modern high-end smart devices with the unique drawElements Quality Program™ (dEQP) software. The study sheds light on the challenges faced by developers aspiring to produce next-generation applications and games leveraging the full power of GPUs.

The study was conducted by running over 18,000 test cases on 17 devices containing 12 different GPUs from five different vendors. The final report has over 40 pages, covering details such as an analysis of OpenGL® ES 2.0 per-feature reliability across devices, the performance variation of shader compilers, and extension support. The commercial version of the report will contain all the data that were gathered, including test logs.

The results show that the GPU vendors have managed to approximately halve the number of functional correctness issues in smartphones since 2010. On the other hand, the worst results for devices launched during the year 2013 are still on the same level as those for typical devices launched in 2010. Among the recently released devices that were studied, performance differences of up to four times were observed in the performance test results, with the fastest device varying according to the individual test.

"I'm really excited by the detailed information we have discovered and how beautifully the dEQP brings out the results. The detective work has been a fun challenge. We have truly followed a scientific approach: measure carefully, compare, confirm, and finally draw the conclusions," said Pyry Haulos, drawElements CTO.

Controlling the quality of the GPUs and drivers is more crucial in the mobile phone and embedded markets than it currently is with personal computers. Personal computers have automated update systems that can distribute an updated driver almost immediately after the fix is found. For mobile devices operating system updates are rare, with intervals of 12 months and long testing cycles. Updating the drivers of the embedded GPUs used in cars or in industrial equipment may require a stop at a service center. The dEQP tool and the market research report help all parties to understand the technological risks associated with bringing out a new product, be it a graphically advanced application or a new device with the latest GPU technology.

To assist application developers, drawElements will immediately make available a summarized version of the report free of charge at drawElements' website. The summarized version covers important topics for developers planning to write applications that are portable across GPUs. The information includes findings on feature reliability and some performance results.

"The information about device and GPU capabilities that dEQP provides is invaluable for our work on Uno and Realtime Studio; tools that allow anyone to create astonishing and truly cross-platform graphics applications for both web and mobile use," said Remi Pedersen, VP Products of Outracks Technologies.

"One purpose of the research project was to show where the next level of evaluating the graphics hardware lies. The days of quoting theoretical vertex or fragment rates and comparing platforms on the basis of a couple of frames-per-second numbers are coming to an end. Developers need real information on measurable capabilities. Device vendors need to be able to choose the platform best suited to their needs," said Kalle Raita, CEO of drawElements.

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 in Helsinki, Finland.

Further information can be found at http://www.drawelements.com.

About Outracks Technologies

Outracks Technologies (www.outracks.com) is the creator of Realtime Studio and the Uno programming language; and a company with a passion for awesome visuals and computer graphics. With their products Outracks have set out to revolutionize the development of real-time visual content for both graphic designers and programmers alike, and enable the use of graphics hardware in a wide range of new use cases on web, mobile and other platforms. Outracks Technologies are based in Oslo, Norway.