

From: Webster, Michael

Sent: 8/16/2011 11:10:23 AM

To: TTAB EFiling

CC:

Subject: U.S. TRADEMARK APPLICATION NO. 77844736 - OPENCL - N/A -
Request for Reconsideration Denied - Return to TTAB - Message 3 of 0

Attachment Information:

Count: 8

Files: Exhibit4-2.jpg, Exhibit5-1.jpg, Exhibit5-2.jpg, Exhibit5-01.jpg, Exhibit5-02.jpg,
Exhibit5-03.jpg, Exhibit5-04.jpg, Exhibit6-1.jpg

http://webcache.googleusercontent.com/search?q=cache:LBBkBnkcfGcJ:www.acceleware.com/press_release/amd-and-acceleware-collaborate-offer-opencl-education+opencl+industry+standard&cd=9&hl=en&ct=clnk&gl=us&source=www.google.com
08/16/2011 09:44:58 AM

courses and know that participants will find the sessions to be highly valuable as they continue to build innovative new applications.”

Beginning in June 2011, Acceleware and AMD will host monthly training sessions at various locations, starting in the US. Participants will receive documentation of course completion. To view the schedule and sign up for the training course, please visit: www.acceleware.com/amd-opencl-training. Courses will be offered for \$2,000. The initial **OpenCL** course schedule includes the following dates and locations:

- ▶ June 28-29 Sunnyvale, CA
- ▶ July 12-13 New York, NY
- ▶ August 16-17 Houston, TX

Acceleware also will sponsor a drop-in lab at the [AMD Fusion Developer Summit](#) to be held June 13-16, 2011 in Bellevue, Washington. Acceleware will join AMD technical personnel, AMD executives, developers and additional partner companies gathered at AMD’s developer summit to discuss **industry** standards including **OpenCL**, and to explore how to best optimize applications for heterogeneous computing. The inaugural summit will gather developers, academics and emerging innovators to learn more about heterogeneous computing, Accelerated Processing Unit (APU) technology, parallel processing and developer programs like the AMD Fusion Fund.

Supporting Resources:

- ▶ Sign up for an **OpenCL** training course
- ▶ AMD **OpenCL** University Kit
- ▶ AMD Developer Central
- ▶ Register for AMD Fusion Developer Summit
- ▶ The AMD Fusion Blog

About AMD

AMD (NYSE: AMD) is a semiconductor design innovator leading the next era of vivid digital experiences with its groundbreaking AMD Fusion Accelerated Processing Units (APUs) that power a wide range of computing devices. AMD’s server computing products are focused on driving **industry**-leading cloud computing and virtualization environments. AMD’s superior graphics technologies are found in a variety of solutions ranging from game consoles, PCs to supercomputers. For more information, visit www.amd.com.

About Acceleware

Acceleware (TSX-V:AXE) develops and markets solutions that enable software vendors to leverage heterogeneous, multi-core processing hardware without rewriting their applications for parallel computing. This acceleration middleware allows customers to speed-up simulation and data processing algorithms, benefiting from high performance computing technologies available in the market such as multiple-core CPUs, GPUs or other acceleration hardware. For more information about Acceleware, please visit www.acceleware.com.

Acceleware is a public company on Canada’s TSX Venture Exchange under the trading symbol AXE. The TSX Venture Exchange Inc. does not accept responsibility for the adequacy or accuracy of this release.



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This is Google's cache of <http://www.techpowerup.com/140988/AMD-Helps-Advance-Parallel-Computing-with-OpenCL-University-Kit.html>. It is a snapshot of the page as it appeared on Aug 13, 2011 07:20:50 GMT. The [current page](#) could have changed in the meantime. [Learn more](#)

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Wednesday, February 23 2011

PRESS RELEASE **AMD Helps Advance Parallel Computing with OpenCL University Kit**

AMD today announced the introduction of the **OpenCL** University Kit, a set of materials that can be leveraged by any university to assist them in teaching a semester course in **OpenCL** programming. This effort underscores AMD's commitment to the educational community, which currently includes a number of strategic research initiatives, to enable the next generation of software developers and programmers with the knowledge needed to lead the era of heterogeneous **computing**. **OpenCL**, the only non-proprietary **industry standard** available today for true heterogeneous computing, helps developers to harness the full compute power of both the CPU and GPU to create innovative **applications** for vivid computing experiences.

"As a former professor at Washington University in St. Louis, I firmly believe that the university setting is a vital environment to cultivate the best and brightest minds and set them on a path to succeed," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "By ensuring that an **industry standard** like **OpenCL** is a central element of the education process, we are helping to put the **PC** application ecosystem in good hands to take full advantage of a heterogeneous computing future."

"Teaching students to effectively leverage the **OpenCL standard** involves all the intricacies of parallel programming plus support for a new class of heterogeneous computing devices built on a variety of **hardware** technologies," said David Kaeli, professor and associate dean of undergraduate programs, Northeastern University College of Engineering. "The **OpenCL** University Kit introduced by AMD is an easy tool to enable educators to quickly introduce **OpenCL learning** into their curriculum, helping them strike a balance between teaching syntax and higher level architectural issues."

Included in the University Kit is a 13 lecture series, equipped with instructor and speaker notes, as well as code examples where necessary. An advanced understanding of **OpenCL** is not needed to understand the course materials; students only require a basic knowledge of C/C++ programming, a C/C++ compiler and an **OpenCL**

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materials; students only require a basic knowledge of C/C++ programming. A C/C++ compiler and an **OpenCL** implementation (such as the **AMD APP SDK**) are needed to complete the exercises.

OpenCL is gaining popularity in academia, with a number of universities already offering similar **OpenCL** courses. For more information on the [university courses](#) currently offered, please visit the **OpenCL Zone** [here](#). If you offer a course that would like to add to the list, you can also do that [here](#).

For students and developers who are interested in presenting technical papers on heterogeneous computing, AMD will be holding its first AMD Fusion Developer Summit from June 13-16 in Seattle, Washington. Proposals can be submitted until February 25. Summit participants will engage in interactive sessions and hands-on labs to deepen their knowledge of advanced CPU and GPU programmability, and gain a better understanding of how software applications can take full advantage of the parallel processing power of APUs, bringing supercomputer-like performance to everyday computing tasks.

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User comments

by [Mussels](#) (February 23rd - 12:18 PM) - [Reply](#)

this was badly needed, **openCL** needs a kickstart

by [LAN_deRf_HA](#) (February 23rd - 12:27 PM) - [Reply](#)

Is **openCL** what was supposed to bring in the era of standardized physics in direct X11? Somebody needs to [sponsor](#) a game with that already, preferably a neutral party but even AMD would do. Would certainly be better than being sponsored by nvidia for physx implementation as then your profits are limited to owners of one brand.

needs to sponsor a game with that already, preferably a neutral party but even AMD would do. would certainly be better than being sponsored by nvidia for physx implementation as then your profits are limited to owners of one brand.

yes, it was.

openCL is the open 'free for everyone to use' coding language for GPU acceleration.

every time i see a program coded for CUDA, i get sad and think it shoulda been done in **openCL**.

by [Swamp Monster](#) (February 23rd - 12:42 PM) - [Reply](#)

by: Mussels

every time i see a program coded for CUDA, i get sad and think it shoulda been done in **openCL**.

[How To: Enable SLI on pre-17/15 hardware](#) (5874)

07:09 by [AhokZYashA](#)
[Anime/Animation Nation](#) (8151)

07:08 by [dCOM](#)
[\[FS/FT\]\[US\] Help dCOM Pay for College! \[PICS\] +Updated Frequently](#) (26)

07:05 by [INSTG8R](#)
[World of Tanks](#) (5)

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06:48 by [MRCL](#)
[Terraria](#) (57)

06:36 by [p_o_s_pc](#)
[Milestones](#) (4073)

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[super high temps in sll! need help asap](#) (11)

06:32 by [dr emulator \(m...](#)
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This is a brief recap of all arguments, results, video, screenshots, etc. discussed in [this thread](#). This page is about the progress in the process to introduce the support for **OpenCL** in Luxrender.

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What are GPGUs ?

Quoted from www.gpgpu.org:

*GPGPU stands for General-Purpose computation on Graphics Processing Units, also known as GPU Computing. Graphics Processing Units (GPUs) are high-performance many-core processors capable of very high computation and data throughput. Once specially designed for computer graphics and difficult to program, today's GPUs are general-purpose parallel processors with support for accessible programming interfaces and **industry standard** languages such as C. Developers who port their applications to GPUs often achieve speedups of orders of magnitude vs. optimized CPU implementations.*

Indeed GPGUs are going to be a very useful tool for Luxrender.

What is **OpenCL** ?

Quoted from www.khronos.org:

OpenCL™ is the first open, royalty-free **standard** for cross-platform, parallel programming of modern processors found in personal computers, servers and handheld/embedded devices. **OpenCL** (Open Computing Language) greatly improves speed and responsiveness for a wide spectrum of applications in numerous market categories from gaming and entertainment to scientific and medical software.

Luxrender developer team want to continue to support a wide range of platforms and OS (i.e. Linux, Window, MacOS, ATI GPGUS, NVIDIA GPUs, etc.). Before **OpenCL** each vendor has its own (i.e. proprietary) set of tools to develop GPGUs application: **NVIDIA CUDA**, **ATI Stream SDK**, etc. **OpenCL** solves this problem and has been seen by Luxrender developer team as the way to go since the release of the first specifications.

Introducing **OpenCL** in Luxrender

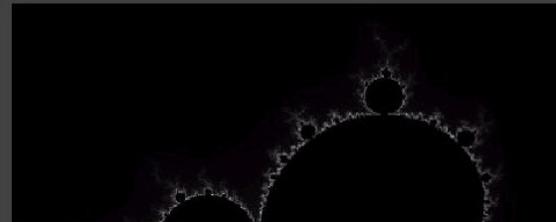
This is a list of the steps done up to now to introduce **OpenCL** support in Luxrender. Indeed it is a quite complex task that requires a lot of tests, experiments and steps.

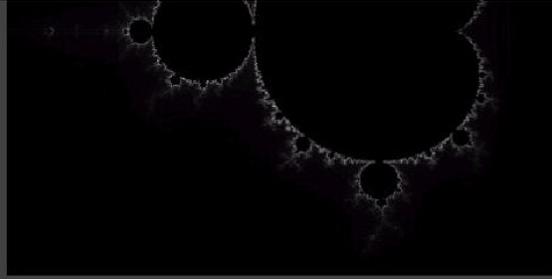
ATI released **OpenCL** beta SDK with hardware support

The first step was the ATI release of a **OpenCL** beta SDK in October with the support for GPGUs in HD4xxx and new HD5xxx generation. This allowed Luxrender developers to do the first tests.

The first test: MandelCPU Vs MandelGPU

MandelGPU has been the very first test written by Dade to compare the performances obtainable with GPGUs and CPU.

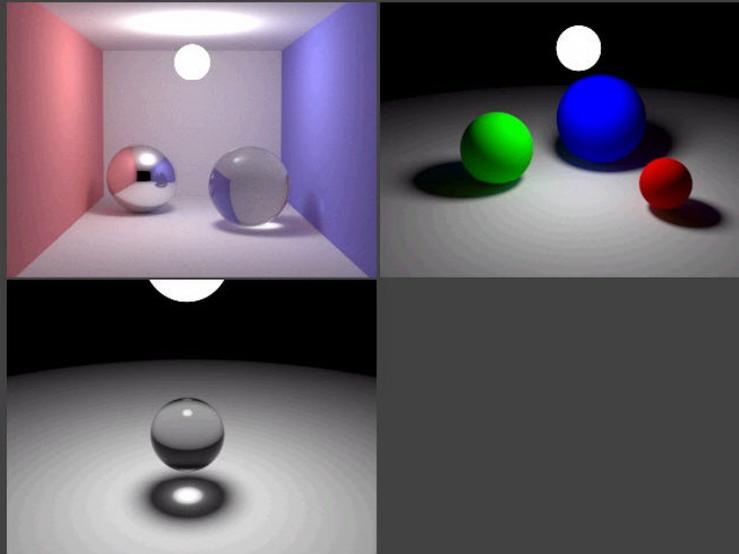




There result were quite impressive: MandelGPU was 62 time faster than MandelCPU.

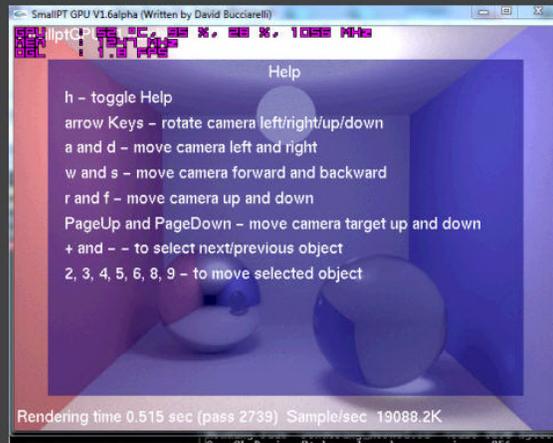
The second test: checking ray tracing performances with SmallptCPU Vs SmallptGPU

SmallptGPU has been developed by Dade in order to check the kind of performances obtainable in our main field of interest with GPGPUs.

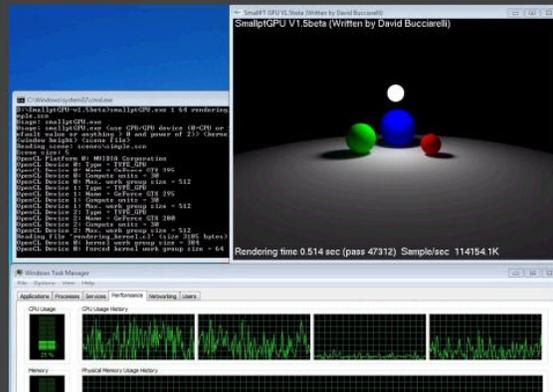


http://webcache.googleusercontent.com/search?q=cache:mthwkMQ8MroJ:www.luxrender.net/wiki/Luxrender_and_OpenCL+opencl+industry+standard&cd=13&hl=en&ct=clnk&gl=us&source=www.google.com 08/16/2011 09:53:11 AM

SmallptGPU is a porting of original Kevin Beason's [1] to **OpenCL**. The performances were again quite impressive: SmallptGPU was about **10** time faster than the SmallptCPU. A video of SmallptGPU can be find [here](#) or [here](#). It has attracted a noticeable amount of interest and has been published on the [front page](#) of Khronos group too. It has been used as benchmark at [Beyond3D](#), [XtremeSystems](#) and in other websites. Some really impressive results have been achieved by running SmallptGPU on an overclocked ATI HD5970 by Lightman.



This is about **45** time faster than SmallptCPU running on an Intel G6600. Talonman has achieved some really high number of samples (on a very simple scene however) by using one of the 2 GPUs available with a NVIDIA GTX 295.



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The banner features the AMD logo on the left and the OpenCL™ logo in the center. To the right, it says "powered by AMD [TOP CODER]". Below the logos, the text reads "AMD OpenCL™ Coding Competition - GPU and CPU Technology for accelerated computing". The background is a dark red with a wavy, abstract pattern.

A red navigation bar with white text and icons. From left to right: a home icon, "HOME", a magnifying glass icon, "LEARN MORE", a download icon, "RULES", a speech bubble icon, "BLOGS", a download icon, "Get the SDK", a speech bubble icon, "Forums", and "FAQ".

Frequently Asked Questions

General Questions

1. How often can I expect to get AMD APP SDK updates?

Developers can expect that the AMD APP SDK may be updated, on average, once per quarter. Actual release intervals may vary depending on available new features and product updates. AMD is committed to providing developers with regular updates to allow them to take advantage of the latest developments in AMD APP technology.

2. What is the difference between the CPU and GPU components of OpenCL that are bundled with the AMD APP SDK?

The CPU component uses the compatible CPU cores in your system to accelerate your OpenCL compute kernels; the GPU component uses the compatible GPU cores in your system to accelerate your OpenCL compute kernels.

3. What CPUs does the AMD APP SDK v2.4 with OpenCL 1.1 support work on?

The CPU component of OpenCL bundled with the AMD APP SDK works with any x86 CPU with SSE3 or later, as well as SSE2.x or later. AMD CPUs have supported SSE3 (and later) since 2005. Some examples of AMD CPUs that support SSE3 (or later) are the AMD Athlon™ 64 (starting with the Venice/San Diego steppings), AMD Athlon™ 64 X2, AMD Athlon™ 64 FX (starting with the San Diego stepping), AMD Opteron™ (starting with E4 stepping), AMD Sempron™ (starting with Palermo stepping), AMD Phenom™, AMD Turion™ 64, and AMD Turion™ 64 X2.

4. What GPUs does the AMD APP SDK v2.4 with OpenCL 1.1 support work on?

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