

From: Webster, Michael

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

To: TTAB EFiling

CC:

Subject: U.S. TRADEMARK APPLICATION NO. 77844736 - OPENCL - N/A -
Request for Reconsideration Denied - Return to TTAB - Message 1 of 0

Attachment Information:

Count: 5

Files: Exhibit1-1.jpg, Exhibit1-2.jpg, Exhibit1-3.jpg, Exhibit1-4.jpg, 77844736.doc

UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)
OFFICE ACTION (OFFICIAL LETTER) ABOUT APPLICANT'S TRADEMARK APPLICATION

APPLICATION SERIAL NO. 77844736

MARK: OPENCL



CORRESPONDENT ADDRESS:

LISA G. WIDUP
APPLE INC.
1 INFINITE LOOP # MS3TM
CUPERTINO, CA 95014-2083

GENERAL TRADEMARK INFORMATION:
<http://www.uspto.gov/main/trademarks.htm>

APPLICANT: Apple Inc.

CORRESPONDENT'S REFERENCE/DOCKET NO:

N/A

CORRESPONDENT E-MAIL ADDRESS:

REQUEST FOR RECONSIDERATION DENIED

ISSUE/MAILING DATE:

The trademark examining attorney has carefully reviewed applicant's request for reconsideration and is denying the request for the reasons stated below. *See* 37 C.F.R. §2.64(b); TMEP §§715.03(a), 715.04(a). The requirement(s) and/or refusal(s) made final in the Office action dated January 24, 2011 are maintained and continue to be final. *See* TMEP §§715.03(a), 715.04(a).

In the present case, applicant's request has not resolved all the outstanding issue(s), nor does it raise a new issue or provide any new or compelling evidence with regard to the outstanding issue(s) in the final Office action. In addition, applicant's analysis and arguments are not persuasive nor do they shed new light on the issues. Accordingly, the request is denied.

Disclaimer Requirement

Applicant argues that "there is simply no authority for the proposition that the name of a programming language, or an open standard, cannot function as a distinctive trademark for software." However, the refusal is not based on a single authority that a programming language or an open standard cannot function as a distinctive trademark. The refusal is based on the record of third party use of the mark as descriptive of a common, non-proprietary language or industry standard, not by the mere fact that the mark identifies a

language or standard. The evidence of third-party use, including the attached additional articles from a Lexis database, identifies OPENCL as a common industry standard language used widely throughout the industry. (See evidence below and attached Internet web pages). Additionally, the previous evidence defining a “standard” as a “specification” or “working method” for hardware or software that is widely used and accepted or sanctioned by a standards organization indicates that the common name of the standard cannot also identify the source of any particular goods. (See Exhibit 3 attached to Final Action and p. 47 of attachments to May 25, 2010 Office Action). Therefore, Applicant’s contention that OPENCL “is also a mark for the standard on which the language is based” is unpersuasive.

Applicant has again submitted third-party registrations of “well-known programming languages” as evidence of names of computing languages that are registered as marks for computer software. (Registration Nos. 2824281 and 2609439 are under Section 2(f) or on the Supp. Reg.). However, the records of those applications are not at issue here and it is unknown whether third parties view those registered marks as source-indicators or common names. The only relevant evidence is how the consuming public views the proposed mark OPENCL, not other terms. Again, third-party registrations are not conclusive on the question of descriptiveness. An applied-for mark that is merely descriptive does not become registrable simply because other similar marks appear on the register. *In re Scholastic Testing Serv., Inc.*, 196 USPQ 517 (TTAB 1977); TMEP §1209.03(a). Contrary to Applicant’s complaint, the Examining Attorney has not relied on third-party registrations as evidence of descriptiveness. The registrations were submitted to counter Applicant’s prior argument that names of common languages such as BASIC are registered as trademarks. The registration shows that BASIC is registered with a disclaimer. The additional LEXIS evidence attached to the Final Refusal shows third-party use of OPENCL referred to as a common language along with other common languages like BASIC, C+, and FORTRAN. Consequently, and contrary to Applicant’s assertion, the Examining Attorney has made no judgment on any prior registrations and relies solely on the evidence of third-party use in the record at hand.

Applicant’s evidence of the Khronos license also does not provide evidence of the source-indicating significance of OPENCL. It only signifies an intent to control some specification of the standard. Applicant further argues that it uses OPENCL for a particular implementation of “the OPENCL standard – namely, an application program interface (API) computer software feature of the MAC OS X operating system.” This is not relevant since OPENCL is the common name for a computing language and the operating system is merely a platform for the implementation of that language. As noted in the Final Action, the API is an interface used in connection with the language.

Applicant’s argument that “Loglan has no direct relevance to Apple’s trademark application” simply because the mark referred to a human language and not a computer language, and the goods at issue were printed dictionaries and grammars, not computer software, is without merit. First, both a human language and a computer language are a means of communicating. (See p.12 of Final action under “Design and Implementation). The Board in *Loglan* stated, “a name originated for a new language is inherently not

registrable for the language.” *Loglan Inst., Inc. v. Logical Language Group, Inc.*, 22 USPQ2d 1531, 1533 (Fed. Cir. 1992). The Applicant’s Snow Leopard operating system software is merely one of the means of implementing the language much like the dictionaries in *Loglan*. More importantly, *Loglan* is cited for its analysis of the evidence. The Court in *Loglan* relied on third-party use of the term as the common name of a language. The Examining Attorney has provided similar third-party use identifying the term as the name of a common computing language. In *Loglan*, the Court cited Appellant’s own use and his encouragement of others to write books in Loglan as evidence of genericness. Similarly, the evidence indicates that Applicant, through its licensees and the industry consortium, has consistently promoted OPENCL as an industry standard language. (See below). A standard, by its definition, cannot also be a proprietary product.

Applicant further argues that “the recent decision in respect of the programming language LUA instructive.” The Examining Attorney disagrees. The evidence herein and provided previously show use by third parties as the common name of a language, and is distinguishable from the LUA case.

Applicant also argues, “[t]he fact that a term refers to a standard does not mean that a term is generic.” This is incorrect. The name for a standard, by definition, cannot also be a trademark. As Applicant states, OPENCL is the “name of a standard means of executing a process” which does not function as a trademark.

Finally, Applicant states, “neither the courts nor the Trademark Office has ever held that the name of a programming language or an industry standard is *automatically descriptive* or generic as applied to the products that embody the programming language or the standard.” In this case, however, the Examining Attorney has held that the proposed mark is descriptive because it is the common name of a standard programming language based on the evidence in the record of third party use, Applicant’s own use, and the definitions in the record. Nothing about the refusal was “automatic”. Consequently, the requirement for a disclaimer of the wording OPENCL under Trademark Act Section 6, 15 U.S.C. §1056(a); TMEP §1213 is continued.

Specimen Does Not Show Use with Goods

The refusal because the specimen does not show the applied-for mark in use in commerce as a trademark for the identified goods is also continued. 15 U.S.C. §§1051, 1127; 37 C.F.R. §§2.34(a)(1)(iv), 2.56; TMEP §§904, 904.07(a).

Applicant argues that the specimen discusses how the “OPENCL software ‘makes it possible for developers to tap the vast gigaflops of computer power currently in the graphics processor and use it for any application.’” This is false. OPENCL is not identified as software on the specimen. As stated previously, the specimen identifies how programmers who program in “the C-based programming language” “in *their* applications” will be able to tap into graphics processors for additional speed and power. A programming language is not software. (See Exhibit 1 attached to Final Action).

Additionally, an “application programming interface” is not software. It is “a set of rules and specifications” that can be used to make use of resources provided by another software program that implements the API. It is an “abstraction”. (See Exhibit 2 to Final Action). Further, the specimen identifies the OpenCL as an “open standard.” The evidence defines a “standard” as a specification or method necessary for equipment from different vendors to communicate an industry. Consequently, the proposed mark OPENCL and design is not used as a trademark to identify computer software or the source of computer software.

The filing of a request for reconsideration does not extend the time for filing a proper response to a final Office action or an appeal with the Trademark Trial and Appeal Board (Board), which runs from the date the final Office action was issued/mailed. *See* 37 C.F.R. §2.64(b); TMEP §§715.03, 715.03(a), (c).

If time remains in the six-month response period to the final Office action, applicant has the remainder of the response period to comply with and/or overcome any outstanding final requirement(s) and/or refusal(s) and/or to file an appeal with the Board. TMEP §715.03(a), (c). However, if applicant has already filed a timely notice of appeal with the Board, the Board will be notified to resume the appeal when the time for responding to the final Office action has expired. *See* TMEP §715.04(a).

If the applicant has any questions, please telephone the assigned examining attorney.
Thank you.

/Michael Webster/

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Time of Request: Monday, August 15, 2011 12:58:50 EST
Client ID/Project Name:
Number of Lines: 1231
Job Number: 1829:301218431

Research Information

Service: Terms and Connectors Search
Print Request: Selected Document(s): 2-
7,9,12,15,18,20,23,24,27,33,34,38,42,44,45,51,55,56,60,63,6
4,75,77,78
Source: US Newspapers and Wires
Search Terms: OpenCl w/para standard

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Copyright 2011 Business Wire, Inc.
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August 8, 2011 Monday 4:00 PM GMT

LENGTH: 1041 words

HEADLINE: Khronos Widens Call for Participation in New WebCL and StreamInput Working Groups;
StreamInput creating open standard for advanced sensor processing; WebCL defining companion API to WebGL to bring parallel computation to the Web;

DATELINE: VANCOUVER, British Columbia

BODY:

In its 10th year of operation the Khronos(TM) Group today widened its call for participation in its two newest working groups: StreamInput(TM) and WebCL(TM). StreamInput is defining a cross-platform API for advanced sensor processing and user interaction, and WebCL is creating JavaScript bindings to **OpenCL(TM)** to enable heterogeneous parallel computing in HTML5 Web browsers. Any interested company is welcome to join Khronos to make contributions, influence the direction of specifications and gain early access to draft **standards** before public release for any Khronos working group. More details on joining Khronos can be found at <http://www.khronos.org/members/> or by emailing info@khronos.org

...provide flexible device discovery to enable an application to select and process high-level semantic input from low-level device capabilities, enabling significant innovations by sensor and device manufacturers while simplifying portable application development. The API will also provide system-wide sensor synchronization for advanced multi-sensor applications such as augmented reality, and will use Khronos' proven extension mechanisms to enable new types of input devices to be easily added and supported. More information on StreamInput is here: <http://www.khronos.org/streaminput/> .

The WebCL working group is working to define a JavaScript binding to the Khronos **OpenCL standard** for heterogeneous parallel computing. WebCL will enable Web applications to harness GPU and multi-core CPU parallel processing from within a Web browser, enabling significant acceleration of applications such as image and video processing and advanced physics for WebGL games. WebCL is being developed in close cooperation with the Web community and has the potential to extend the capabilities of HTML5 browsers to accelerate computationally intensive and rich visual computing applications. More information about WebCL, including links to prototype open source implementations from Nokia and Samsung, is here: <http://www.khronos.org/webcl/> .

"Advances in computational power on a ...

Khronos Widens Call for Participation in New WebCL and StreamInput Working Groups; StreamInput creating open standard for advanced sensor processing; WebCL defining companion API to WebGL to bring par

...fusion innovation under a common API that provides portability to application developers," said Neil Trevett, president of Khronos and vice president of mobile content at NVIDIA. "WebCL is the natural extension of the WebGL and OpenCL work already underway at Khronos and continues the trend of evolving HTML5 not only to support advanced Web experiences but also to become a full-fledged application platform with access to advanced device capabilities."

"AMD is highly supportive of the WebCL initiative to deliver compute capabilities to Web browsing," said Suki Samra, Senior Director, Design Engineering (NYSE: AMD). "AMD strongly supports industry **standards**, and as a leading provider of **OpenCL** and OpenGL solutions on AMD's GPUs and APUs believes that WebCL will be a welcome companion to the newly released WebGL **standard**."

"We are delighted the Nokia initiative to standardize WebCL has been accepted by Khronos. The developer feedback about our WebCL prototype for Firefox has been positive, and we are committed to work with the open-source community to align it with the developing WebCL standard," says Jyri Huopaniemi, director, media technologies, Nokia Research Center.

"SoftKinetic is excited to contribute to this standard initiative which will facilitate the adoption of new input devices such as depth sensing cameras. It is important to facilitate content developer's workflows as much as possible by abstracting these devices behind a robust and standard API," said Erik Krzeslo, chief strategy officer. "SoftKinetic products will greatly ...

...Visit Khronos at booth #663 and Khronos Press & Educators Open House at booth #764 to see Khronos members display Khronos Group-developed technology in action.

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(TM), WebCL(TM), **OpenCL**(TM), OpenMAX(TM), OpenVG(TM), OpenSL ES(TM), StreamInput(TM) and COLLADA(TM). 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 www.khronos.org .

Khronos, StreamInput, WebGL, WebCL, COLLADA, OpenKODE, OpenVG, OpenSL ES and OpenMAX are trademarks of the Khronos Group Inc. OpenCL is a trademark of Apple Inc. and OpenGL is a registered trademark and the OpenGL ES and ...

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August 8, 2011 Monday 9:01 PM GMT

AMD Collaborates With Autodesk to Enable Easier and Faster Programming for Game Developers and 3D Artists; New 3D Rendering Plug-In Leverages Open Source Bullet Physics Engine and the OpenCL(TM) Indus

LENGTH: 608 words

HEADLINE: AMD Collaborates With Autodesk to Enable Easier and Faster Programming for Game Developers and 3D Artists; New 3D Rendering Plug-In Leverages Open Source Bullet Physics Engine and the **OpenCL(TM)** Industry **Standard**

DATELINE: SUNNYVALE, CA; Aug 09, 2011

BODY:

Today at SIGGRAPH 2011, AMD (NYSE: AMD) announced the latest industry-leading application to support open-source Bullet Physics and **OpenCL(TM)** industry **standards**. Through its collaboration with AMD, Autodesk has incorporated a new Bullet Physics plug-in, based on **OpenCL(TM) standards**, into the Autodesk Maya 2012 software Subscription Advantage Pack.

Now game developers and 3D artists will have access to new creative workflow capabilities in Maya to help create interactive cloth simulations on a greater range of workstations and PCs, including those based on AMD FirePro(TM) professional graphics cards and AMD CPUs. AMD and Autodesk first publicly demonstrated the Bullet Physics plug-in technology at the Game Developers Conference earlier this year. At SIGGRAPH, there will be demonstrations running on systems powered by the latest AMD professional graphics products.

...GPU compute and Bullet Physics simulations to 3D content creation enables developers of computer-generated (CG) graphics to bring new levels of realism to life.

"We are committed to providing the CG developer community with high-performance solutions to help unleash their creativity on the screen," said Rob Hoffmann, senior product marketing manager, Autodesk Media & Entertainment. "The Bullet Physics plug-in will open up the Maya 2012 software to more graphics hardware options and introduce OpenCL programming interfaces, helping to reduce CG development time and enable a more visual experience for the end-user."

"We are proponents of industry **standards** like **OpenCL** and Bullet Physics because they can simplify programming as well as removing barriers caused by proprietary technologies that can restrict developers' creativity," said Sandeep Gupte, general manager, AMD Professional Graphics. "With the new Bullet Physics plug-in for Maya 2012, CG content developers will be able to focus their time and energy on the creation of realistic visuals and amazing special effects for innovative games and movies."

SIGGRAPH, the premier international event on computer graphics and interactive techniques, is taking place at the Vancouver Convention Centre in Vancouver, British Columbia, August 9-11. Visit AMD ...

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AMD Opens the Throttle on APU Performance With Updated OpenCL Software Development Kit
Marketwire August 7, 2011 Sunday 9:01 PM GMT

Marketwire

August 7, 2011 Sunday 9:01 PM GMT

LENGTH: 855 words

HEADLINE: AMD Opens the Throttle on APU Performance With Updated OpenCL Software Development Kit

DATELINE: SUNNYVALE, CA; Aug 08, 2011

BODY:

...NYSE: AMD) today announced availability of the AMD Accelerated Parallel Processing (APP) Software Development Kit (SDK) v2.5. Featuring advances in CPU to GPU data throughput, the latest version of the APP SDK provides developers a solid foundation to take full advantage of Accelerated Processing Units (APUs), including the latest AMD A-Series APUs offering brilliant HD graphics, supercomputer-like performance and All-Day battery life.(i)

The AMD APP SDK helps developers quickly and easily tap into the power of GPU compute and parallel processing in heterogeneous computing platforms, building on the **OpenCL(TM)** industry **standard** to help developers reach a broader market by writing applications that run on a variety of device form factors.

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Electronic Engineering Times

June 20, 2011 Monday

SECTION: NEWS OF THE TIMES; Pg. 8

LENGTH: 219 words

HEADLINE: AMD offering \$50k in OpenCL app contest

BYLINE: Rick Merritt

BODY:

AMD uses the **OpenCL standard** to run general computing jobs in parallel on its graphics cores, while archrival Nvidia uses its own tools under the Cuda brand. AMD hosted a developer summit last week to encourage use of **OpenCL**, and it launched the latest versions of its hybrid chips at the event.

AMD offering \$50k in OpenCL app contest Electronic Engineering Times June 20, 2011 Monday

As many as 50 apps, including Microsoft's Internet Explorer 9, have been tuned to use OpenCL on AMD's hybrid processors thus far, the company said. AMD hired TopCoder to run the contest. The rules are available at <http://community.topcoder.com/amdapp/>.

To participate in the contest, developers need to submit an abstract describing their app and download an AMD OpenCL software developer's kit, related drivers and run-time software. The contest is open to developers in a wide range of fields, including video, imaging, security, data mining, ...

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June 14, 2011 Tuesday 9:01 PM GMT

LENGTH: 746 words

HEADLINE: AMD Launches Contest for Developers to Create Heterogeneous Compute Applications;
AMD OpenCL(TM) Coding Competition to Reward Software Developers Creating Accelerated Applications That Make the Most of AMD Technologies

DATELINE: SUNNYVALE, CA; Jun 15, 2011

BODY:

AMD (NYSE: AMD) today announced the AMD OpenCL(TM) Coding Competition, being run by software development leader TopCoder. This contest is intended to encourage the creation of applications that take advantage of OpenCL(TM) as well as the award-winning AMD Fusion Accelerated Processing Unit (APU) architecture. The OpenCL(TM) Coding Competition is open to software developers with great ideas, and up to \$50,000 in prizes will be awarded to winning submissions.

"We're at an inflection point in the computing industry with evolving chip architectures and the shift to common programming interfaces and industry **standards**, which enable developers to enable amazing new experiences," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "The **OpenCL** Coding Competition is just the beginning of a new wave of application development by the software community as they embrace heterogeneous computing across multiple platforms."

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AMD Ushers in Next Generation of Computing With AMD A-Series APUs; New AMD Fusion APUs Enable Brilliant Graphics, Supercomputer-Like Performance and All Day Battery Life(i)
Marketwire June 13, 2011 Mo
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June 13, 2011 Monday 9:01 PM GMT

LENGTH: 1674 words

HEADLINE: AMD Ushers in Next Generation of Computing With AMD A-Series APUs; New AMD Fusion APUs Enable Brilliant Graphics, Supercomputer-Like Performance and All Day Battery Life(i)

DATELINE: SUNNYVALE, CA; Jun 14, 2011

BODY:

...Ecosystem AMD has seen great momentum in the software developer community since the launch of AMD Fusion APUs in January 2011, with more than 50 leading applications now accelerated by the family of AMD Fusion APUs and advanced browsers like Internet Explorer 9 delivering even more immersive, next generation web experiences when running on an AMD Fusion APU-powered PC. And, the inaugural AMD Fusion Developer Summit, running now through June 16 in Seattle, Washington, is providing a forum for developers, academics and innovators to collaborate around parallel programming and industry **standards** like **OpenCL(TM)**, helping the software ecosystem build on the promise of the latest computing methodologies.

Supporting Resources ...

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June 7, 2011 Tuesday 9:01 PM GMT

LENGTH: 1071 words

HEADLINE: AMD and Leading Software Vendors Continue to Expand Offerings Optimized for **OpenCL(TM) Standard**; Common Industry Programming Interface, Heterogeneous APU Technology Enable Brilliant Experiences Across Computing Platforms

DATELINE: SUNNYVALE, CA; Jun 08, 2011

BODY:

AMD and Leading Software Vendors Continue to Expand Offerings Optimized for OpenCL(TM) Standard; Common Industry Programming Interface, Heterogeneous APU Technology Enable Brilliant Experiences Across

AMD (NYSE: AMD) today announced increasing industry adoption of the **OpenCL(TM) standard** across a broad range of innovative software applications. As a long-standing proponent of industry **standards**, AMD works closely with leading software companies to help optimize their applications across common platforms, while accelerating these solutions with the latest technology offerings, including AMD Fusion Accelerated Processing Units (APUs).

"Software developers can benefit significantly from working with common programming interfaces to harness the outstanding performance of innovative, heterogeneous technology like AMD Fusion APUs across platforms," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "The software industry continues to advance at breakneck speed with an ever increasing number of innovative applications that are coming to market, which are based on common platforms such as OpenCL, ...

As software developers embrace common application programming interfaces (APIs), the industry is seeing a groundswell of consumer and commercial applications built on the **OpenCL standard**, thanks to its inherent flexibility across platforms, operating systems and vendor hardware.

"Today's creative professional needs a complete solution that delivers clear, crisp and stutter-free visuals that will allow them to edit, process and create content quickly and without interruption," said Dave Chaimson, vice president of Global Marketing, Sony Creative Software. "New support has been added to Vegas Pro 10.0d for accelerated **OpenCL**-based video rendering. We see this as a solid first step towards a faster production workflow for video professionals, and we are strongly committed to the **OpenCL standard**."

HP Labs also is working with AMD to implement **OpenCL** acceleration of real-time imaging software for HP large-format, commercial and industrial printing solutions. "Innovative, leading-edge technology is key to providing the best possible support to HP's commercial printing customers," said I-Jong Lin, principal scientist, Print and Content Delivery, HP Corporate Research Laboratory. "The application of GPU acceleration in raster image processing has enabled a breakthrough in commercial printing solutions, and we anticipate replicating that success across market segments by porting our OpenPL library to **OpenCL standards**."

Following is a sample of leading applications that already support OpenCL or will support it in the near future:

DVD/Media Players

- ArcSoft, TotalMedia(R) Theatre - All-in-one video playback software
- Corel WinDVD(R) - Blu-ray(TM) and DVD player software

Telepresence and Webcam Apps

- ArcSoft, Webcam Companion(R) - Application bundle with HD and 3D support for web cameras
- ViVu VuRoom - Multi-party desktop videoconferencing software
- ViVu VuCast - Large-scale video webcast software

AMD and Leading Software Vendors Continue to Expand Offerings Optimized for OpenCL(TM)
Standard; Common Industry Programming Interface, Heterogeneous APU Technology Enable
Brilliant Experiences Across
Video Creation/Editing Software ...

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May 10, 2011 Tuesday 9:01 PM GMT

LENGTH: 760 words

HEADLINE: AMD and Acceleware Collaborate to Offer OpenCL(TM) Education;
Monthly OpenCL Training Courses to Be Held in Various Locations Worldwide

DATELINE: SUNNYVALE, CA; May 11, 2011

BODY:

AMD (NYSE: AMD) today announced a collaboration with Acceleware whereby the companies will deliver professional training programs to help developers learn how to create applications that comply with **OpenCL(TM) standards**. This announcement follows AMD's recent introduction of the **OpenCL(TM) University Kit**, a set of course materials designed for universities to teach semester-long courses in **OpenCL** programming.

The jointly developed **OpenCL** courses from AMD and Acceleware are designed to support professional software developers by providing ongoing education opportunities around **OpenCL**, the non-proprietary industry **standard** for true heterogeneous computing across platforms.

OpenCL helps developers harness the full power of the CPU and GPU to create rich and vivid computing experiences on a wide variety of devices," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "Our work with Acceleware is another example of our commitment to supporting industry **standards**, and we're excited to offer **OpenCL** learning opportunities for professional developers, which complement our previously announced **OpenCL** University Kit."

"The developer community is hungry for more education around open standards for software development, and we're thrilled to work with AMD on this education series," said Robert Miller, vice president of Marketing and Product Management for Acceleware. "We're tapping top-notch developers to lead our training 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 ...

AMD and Acceleware Collaborate to Offer OpenCL(TM) Education; Monthly OpenCL Training Courses to Be Held in Various Locations Worldwide Marketwire May 10, 2011 Tuesday 9:01 PM GMT

...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 ...

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April 26, 2011 Tuesday 9:01 PM GMT

LENGTH: 674 words

HEADLINE: AMD and MulticoreWare Team to Help Developers Optimize the Use of OpenCL(TM) for AMD Fusion APUs

DATELINE: SUNNYVALE, CA; Apr 27, 2011

BODY:

"Our work with AMD is designed to specifically tackle major development challenges the software ecosystem is currently facing, such as maximizing compute utilization, efficiently handling data movement and minimizing dependencies across cores. With improved tools in place,

AMD and MulticoreWare Team to Help Developers Optimize the Use of OpenCL(TM) for AMD Fusion APUs Marketwire April 26, 2011 Tuesday 9:01 PM GMT

developers will be able to optimize applications to run on powerful heterogeneous and multi-core architectures with ease, and take full advantage of programmable platforms," said Professor Wen-Mei Hwu, chief technology officer, MulticoreWare. "**OpenCL** is incredibly important as an industry-**standard** programming environment that enables developers to focus on applications, not just chip architecture. We foresee these tools driving impactful innovation that can lead to some unbelievable new applications."

AMD and MulticoreWare are committed to working together to continue fueling broad industry adoption of OpenCL. The advanced set of tools is designed to work across all relevant vendor hardware, encouraging expansive OpenCL deployment for heterogeneous computing, APUs, as well as discrete CPUs and GPU computing. Previews and tools are scheduled to be available later in 2011.

For developers interested in heterogeneous computing, AMD will be holding its first AMD Fusion ...

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April 11, 2011 Monday 9:30 PM GMT

LENGTH: 1247 words

HEADLINE: AMD Fusion Technology and Discrete Graphics Accelerate Award-Winning Sony Vegas Pro Video Production Software;
AMD Fusion Accelerated Processing Units (APUs) and World-Class AMD Graphics Solutions Enable High-Performance Environment for Vivid Video Creation

DATELINE: LAS VEGAS, NV; Apr 12, 2011

BODY:

High-end workstations and desktop PCs based on ATI FirePro or AMD Radeon graphics cards feature AMD Accelerated Parallel Processing (APP) technology to enable GPU compute-powered hardware acceleration of Vegas Pro.(1) The combination of Vegas Pro and AMD APP Acceleration enables a more immersive and realistic HD and 3D video, audio and Blu-Ray Disc(TM) creation solution. Professional multimedia artists also can harness the horsepower of true heterogeneous computing with AMD Fusion APUs and **OpenCL(TM) standards**. Desktop PCs featuring the upcoming next-generation AMD Fusion A-series APUs codenamed "Llano", which include up to four x86 cores and a DirectX(R) 11-capable discrete-level GPU, are expected to be available by mid-year.

AMD Fusion Technology and Discrete Graphics Accelerate Award-Winning Sony Vegas Pro Video Production Software; AMD Fusion Accelerated Processing Units (APUs) and World-Class AMD Graphics Solutions Ena

"Our strategic collaboration with Sony Creative Software has allowed us to deliver a compelling video solution to creative professionals, taking full advantage of AMD's leading APU and GPU technologies," said Charlie Boswell, director of AMD Digital Media and Entertainment. "The combination of Vegas Pro 10.0d software with AMD's incredible computing platforms and **OpenCL standards** offers professional movie makers and broadcasters an immersive and high-powered HD 2.0 environment in which to create stunning content."

"Today's creative professional needs a complete solution that delivers clear, crisp and stutter-free visuals that will allow them to edit, process and create content quickly and without interruption," said Dave Chaimson, vice president of global marketing, Sony Creative Software. "The new support in Vegas Pro 10.0d for accelerated **OpenCL**-based video rendering is a solid first step towards a faster production workflow for video professionals. Both AMD and Sony are strongly committed to the **OpenCL standard** and together look forward to providing filmmakers and broadcast professionals access to an unparalleled suite of products driven by an outstanding hardware solution."

The Vegas Pro collection is Sony's award-winning line of video production software that offers the most robust and progressive platform available for content creation and production. The latest version of the software introduces a number of 3D editing features in addition to professional-quality video effects and advanced audio editing. Further, Sony Creative Software's adoption of **OpenCL standards** can help creative professionals advance innovation and take full advantage of computing power across common industry platforms.

Vegas Pro 10.0d from Sony Creative Software is the latest application to be accelerated by AMD Fusion APUs, joining a host of multimedia, gaming and productivity solutions delivering immersive computing experiences and vivid visual entertainment.

Supporting Resources ...

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April 11, 2011 Monday 8:30 AM EST

LENGTH: 1021 words

HEADLINE: Sony Creative Software Releases New Update for Vegas(TM) Pro; Award-Winning NLE Improves Closed Captioning, Adds Support for GPU Rendering on AMD ATI Graphic Chipsets, and Adds 3D Blu-ray Disc(TM) Timeline Burning Capability for Complete 3D Solution

DATELINE: LAS VEGAS, April 11, 2011

Sony Creative Software Releases New Update for Vegas(TM) Pro; Award-Winning NLE Improves Closed Captioning, Adds Support for GPU Rendering on AMD ATI Graphic Chipsets, and Adds 3D Blu-ray Disc(TM) Tim

BODY:

...Software continues to innovate with industry-leading solutions for creative professionals who work with closed captioning and 3D technology," said Dave Chaimson, vice president of global marketing for Sony Creative Software. "The new enhancements in Vegas Pro 10.0d, especially the OpenCL render improvements to support the AMD ATI graphic chipsets, provide cutting edge tools that equip industry professionals with improved capabilities to produce quality work at a greater efficiency."

Vegas Pro 10.0d expands its GPU accelerated AVC encoding support to video editing professionals using AMD ATI graphics chipsets which support **OpenCL**, the open **standard** for parallel programming of heterogeneous systems. This new feature enables faster project rendering in many cases when using the Sony AVC encoder for a more efficient workflow. Additional updates include MVC and MPO 3D file format compatibility from Sony cameras including TD10, NX3D1, TD300 and the Alpha and NEX series, providing users with added support for advanced camera and media technologies.

"We are very encouraged to see that Sony Creative Software has adopted **OpenCL(TM) standards** and support for AMD Fusion technology to enable powerful solutions to meet the ever-growing demands of creative professionals," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "At AMD we believe that industry **standards** like **OpenCL** are key to advancing innovation, helping creative professionals to rely on and fully leverage available computing power on a common industry platform to bring inspiration to reality."

New Features in Vegas(TM) Pro 10.0d

GPU Accelerated AVC Encoding Support Expanded to AMD - Adds support for users with AMD ATI graphics chipsets which support OpenCL to use the Sony AVC encoder for faster project rendering
3D MVC and MPO File Format Support - Additional native support for emerging MVC and MPO 3D file formats provides continued functionality with cutting edge camera and media ...

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March 1, 2011 Tuesday 9:01 PM GMT

LENGTH: 656 words

HEADLINE: AMD Showcases New Open Source Physics Plug-In for Autodesk Maya 2011 at Game Developers Conference;
New Plug-In Offers Users Real-Time Physics Plug-In for Popular 3D Animation Software

DATELINE: SAN FRANCISCO, CA; Mar 02, 2011

AMD Showcases New Open Source Physics Plug-In for Autodesk Maya 2011 at Game Developers Conference; New Plug-In Offers Users Real-Time Physics Plug-In for Popular 3D Animation Software Marketwire Marc

BODY:

Today at the Game Developer's Conference (GDC), AMD (NYSE: AMD) announced a technology demonstration of a Bullet Physics plug-in for Autodesk(R) Maya(R) 2011 software. The new plug-in is based on **OpenCL(TM)** industry **standards** and the open-source Bullet Physics Engine.

AMD's Bullet Physics plug-in for Autodesk Maya 2011 is designed to enable game developers and 3D artists to access Maya's creative workflow capabilities to create interactive cloth simulations on a greater range of workstations and PCs, including those based on ATI FirePro(TM) professional graphics cards and AMD CPUs, and to remove technology limitations that can restrict developers' ability to create stunning games and computer-generated (CG) graphics.

AMD is committed to collaborating with partners like Autodesk on industry **standards** and open-source software solutions that open up a world of vivid visual experiences," said Janet Matsuda, general manager of AMD Professional Graphics. "This new plug-in will give CG content developers an open development path with **OpenCL** and a powerful solution for incorporating high-quality physics that offer realistic animation of how rendered objects move in a game or film."

AMD is publicly demonstrating the new Bullet Physics plug-in technology in the AMD booth at GDC 2011. AMD's GDC demo will run on systems powered by the ATI FirePro(TM) V8880 professional graphics card, designed for workstation users who demand outstanding visual flexibility and the type of high-end GPU compute power that is enabled by AMD Accelerated Parallel Processing (APP) technology.

"We are heavily focused ...

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February 22, 2011 Tuesday 9:01 PM GMT

LENGTH: 681 words

HEADLINE: AMD Helps Advance Parallel Computing With **OpenCL(TM)** University Kit; Common Industry **Standard OpenCL** Helps Developers Easily Create Powerful Applications for Various Platforms

DATELINE: SUNNYVALE, CA; Feb 23, 2011

BODY:

AMD Helps Advance Parallel Computing With OpenCL(TM) University Kit; Common Industry Standard OpenCL Helps Developers Easily Create Powerful Applications for Various Platforms
Marketwire February 22,

AMD (NYSE: AMD) today announced the introduction of the OpenCL(TM) 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 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 ...

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News Bites Us Markets
News Bites US Markets

AMD Boosts Application Development for AMD Fusion APU-Powered PCs with Updated Software Development Kit News Bites US Markets January 28, 2011 Friday

January 28, 2011 Friday

LENGTH: 444 words

HEADLINE: AMD Boosts Application Development for AMD Fusion APU-Powered PCs with Updated Software Development Kit

BODY:

"When developers harness the power of parallel processing within our APU designs, they can fundamentally change the PC experience to help not only make it faster, but also to create new possibilities in software," said John Taylor, director of Client Product and Software Marketing, AMD. "In 2008, AMD was the first processor design company to embrace OpenCL, and as such, we have made significant progress in parallel processing innovation. Our vision has been realized with the widespread availability of the first PCs powered by AMD Fusion APUs."

"Industry **standards** like **OpenCL** and OpenGL, common APIs, and tools like the AMD APP library and SDK give application developers a shared environment that allows them to harness maximum hardware performance for amazing application experiences across platforms," said George Tang, vice president and general manager of ArcSoft's Video and Home Entertainment Group. "By supporting these open **standards**, AMD is giving developers access to a programming environment that helps them more easily navigate the recent advances in computer hardware, including AMD's APU technology."

In addition to support for the first AMD Fusion APUs and OpenCL 1.1, AMD APP SDK v2.3 offers improved runtime performance and math libraries for OpenCL.

AMD Developer Summit

Improving **OpenCL** performance and programmability on AMD platforms is a key initiative for AMD, and this summer, AMD technical personnel, AMD executives, developers and partner companies will gather at the AMD Fusion Developer Summit to discuss industry **standards** including **OpenCL**, and to explore how to best optimize applications for heterogeneous computing.

The inaugural AMD Fusion Developer Summit (AFDS) will be held June 13-16, 2011 in Bellevue, Washington. Presentation proposals are due by February 4, 2011. AFDS will gather developers, academics and emerging innovators to learn more about heterogeneous computing, APU technology, parallel processing and developer programs like the AMD Fusion Fund.

Resources

- * Download AMD APP SDK v2.3
- * AMD Fusion Developer Summit
- * Visit OpenCL Zone
- * AMD blog
- * Follow AMD on Twitter @AMD_Unprocessed

Source: ...

ArcSoft Demonstrates Applications Optimized for GPU Compute and the AMD Fusion Family of APUs at CES 2011; Hardware accelerated video playback and faster file conversion on PCs
Business Wire January 6

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January 6, 2011 Thursday 2:00 PM GMT

LENGTH: 667 words

HEADLINE: ArcSoft Demonstrates Applications Optimized for GPU Compute and the AMD Fusion Family of APUs at CES 2011;
Hardware accelerated video playback and faster file conversion on PCs

DATELINE: FREMONT, Calif.

BODY:

...media player to fully leverage the power of the UVD3 decoding engine. It also utilizes AMD Accelerated Parallel Processing (APP) technology to upscale standard-definition content to near high-resolution in real-time while offloading massive data processing to its efficient GPU.

MediaConverter 7, a powerful and easy-to-use all-in-one multimedia file converter, also takes advantage of the AMD UVD3 decode engine and uses AMD APP technology to accelerate encoding during the transcoding process.

Panorama Maker 5 Pro allows users to create panoramic masterpieces with their photos and videos. The stitching process is now optimized with **OpenCL(TM)**, an open **standard** framework for heterogeneous platforms consisting of CPUs and GPUs, which is ideally suited for AMD Fusion APUs.

"AMD Fusion is the first true platform to release the boundary of CPU and GPU," said George Tang, ArcSoft's Vice President and General Manager of the Video and Home Entertainment Group. "And because of that, software companies like ArcSoft are able to take full advantage of the computing resources and deliver PC users an experience that was not possible before."

"Today's consumers demand outstanding digital multimedia experiences on their PCs, whenever and wherever they choose," said John Taylor, Director of Client and Software Product Marketing, AMD (NYSE: AMD). "With the ...

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MainConcept Supercharges H.264 Encoding Performance; Enhances OpenCL(TM) H.264/AVC Encoder SDK Highly Optimized for ATI FirePro(TM) Professional Graphics PR Newswire January 6, 2011 Thursday 8:30 AM E

January 6, 2011 Thursday 8:30 AM EST

LENGTH: 862 words

HEADLINE: MainConcept Supercharges H.264 Encoding Performance; Enhances OpenCL(TM) H.264/AVC Encoder SDK Highly Optimized for ATI FirePro(TM) Professional Graphics

DATELINE: LAS VEGAS, Jan. 6, 2011

BODY:

LAS VEGAS, Jan. 6, 2011 /PRNewswire/ -- CES 2011 -- Sonic Solutions®, (Nasdaq: SNIC) today announced the availability of the MainConcept® **OpenCL** H.264/AVC encoder SDK optimized for the immensely popular ATI FirePro(TM) professional graphics and AMD Radeon(TM) graphics from AMD (NYSE: AMD). Widely recognized as the world leader in codec development, MainConcept's new SDK dramatically improves H.264/AVC HD video encoding times by efficiently harnessing the **OpenCL standard**. As the most widely-used format for delivering rich multimedia content, H.264/AVC is broadly deployed in the consumer and broadcast space for over-the-air digital transmission and streaming, as well as online premium content movie download services such as RoxioNow(TM). Licensees of the new MainConcept SDK can be significantly more efficient than competitors in bringing the best video content to market.

"The explosion of HD video content across both professional and consumer mediums has presented new challenges for the development community. Sonic, with the support of AMD, has taken a significant step forward in addressing these challenges with the introduction of the MainConcept **OpenCL** H.264/AVC Encoder SDK," said Janet Matsuda, general manager of Professional Graphics for AMD. "**OpenCL** continues to gain momentum. With the introduction of tools that enable developers to leverage this programming environment for popular video and audio codecs, professionals and consumers benefit from accelerated performance as well as the investment protection from working with an open **standard**."

The MainConcept OpenCL H.264/AVC encoder SDK contains a high-level Windows® library as well as a DirectShow filter for easy integration into a variety of creative, broadcast, and professional applications. Along with offering access to a beta version from the MainConcept licensee portal, MainConcept technical teams are working with a number of early adopters to enable even faster optimized integration.

"Of course, access to optimized technology is vital, but also key is the technical expertise and support that enables our business partners to realize product and deployment goals as quickly as possible," said Muzaffer Beygirici, Managing Director of MainConcept. "AMD understands this is imperative, and we are delighted to be working with them to offer our customers the most efficient H.264 implementation possible, based on the **OpenCL standard**. With our new **OpenCL** H.264/AVC encoding SDK, our customers can expect to gain a significant increase in stream creation efficiency, along with the mastering quality video image for which MainConcept H.264 is well known."

MainConcept Supercharges H.264 Encoding Performance; Enhances OpenCL(TM) H.264/AVC Encoder SDK Highly Optimized for ATI FirePro(TM) Professional Graphics PR Newswire January 6, 2011 Thursday 8:30 AM E

MainConcept products and technologies are part of Sonic's Professional Technology Division, the world's leading developer of core video codec SDKs, APIs, and software applications that enable the creation, distribution, and enjoyment of digital media across the entire digital media value chain.

About Sonic Solutions

Sonic Solutions® (NASDAQ: SNIC) enables digital media from Hollywood to home. For more than two decades, Sonic ...

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December 13, 2010 Monday 9:01 PM GMT

LENGTH: 988 words

HEADLINE: AMD Fusion Developer Summit Issues Call for Presentation Proposals on Heterogeneous Computing;
AMD Invites Application Developer Community to Collaborate on Open Standards; Access New Market Opportunities by Advancing APU and GPU Computing

DATELINE: SUNNYVALE, CA; Dec 14, 2010

BODY:

...AMD Fusion Developer Summit (AFDS) will be held June 13-16, 2011 in Bellevue, Washington. Presentation proposals must be submitted by February 4, 2011, and all proposals will be reviewed by a conference board composed of researchers, academics and practitioners in the field. Selected candidates will be notified by March 16, 2011.

AFDS will gather developers, academics and emerging innovators who are developing next-generation software. The summit will provide software developers with an opportunity to learn more about Accelerated Processing Unit (APU) technology and programming methodologies using industry-**standard** application programming interfaces (APIs) such as **OpenCL(TM)**, **OpenGL(TM)** and Microsoft DirectCompute, among others. During the AMD Fusion Developer Summit, participants will engage in interactive sessions and hands-on labs to learn more about APU features and deepen their knowledge of advanced parallel processing programmability.

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AMD on core wars and beyond Electronic Engineering Times November 15, 2010 Monday

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Electronic Engineering Times

November 15, 2010 Monday

SECTION: NEWS OF THE TIMES; Pg. 10

LENGTH: 969 words

HEADLINE: AMD on core wars and beyond

BYLINE: Rick Merritt

BODY:

...compute cores.

Moore outlined AMD's plan to evangelize the industry on developing the software needed for merged X86 and graphics chips. The stack includes new run-time environments, domain libraries and high-level frameworks.

AMD aims to make graphics functions equal citizens with X86 cores. The two will share unified virtual address space that is part of pageable system memory. GPUs on and off the main processor will be brought into the CPU's cache-coherent memory domain, and ultimately GPUs will support context switching, Moore said.

Many of the features require support from partners such as Microsoft and developers of the **OpenCL standard** for multicore programming. For example, AMD plans to deliver a GPU including a hardware scheduler with close OS integration.

Any app in user mode will be able to use the GPU without talking to the OS or device drivers, making a direct connection to offload work with new task-parallel queuing run-times, said Moore.

The future run-times could be upgrades of today's OpenCL and Microsoft DirectCompute run-times or new software such as ConcRT, GCD or TBB, he said.

AMD will also take some steps on its own. For example, it will support bidirectional movement of ...

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Computer Reseller News

November 1, 2010 Monday

Nvidia Adds To Quadro; 2goPad Runs On Atom Computer Reseller News November 1, 2010
Monday

SECTION: ECOSYSTEMS; Pg. 12

LENGTH: 1314 words

HEADLINE: Nvidia Adds To Quadro; 2goPad Runs On Atom

BYLINE: Zewde Yeraswork

BODY:

...Family

Nvidia introduced Quadro 2000 and Quadro 600 cards, both of which run on CUDA (Compute Unified Design Architecture), a parallel computing architecture available to software developers for a number of applications. The latest additions to the Fermi-based Quadro line of GPUs from Nvidia run on 192 CUDA cores (the Quadro 2000) and 96 CUDA cores (the Quadro 600). The Quadro 600 is only half the height of the Quadro 2000 model, but it can interact with larger, more complex, models and offers more efficient performance per watt.

Both Quadro cards are built on industry **standards** such as OpenGL 4.1, DirectX 11, DirectCompute and **OpenCL** and both feature 30-bit color fidelity, or 10 bits per color. Both are PCI Express 2.0-compliant and are designed to be especially quiet, as Nvidia continues to focus on the professional desktop market and its potential uses for cutting-edge graphics. The Quadro 600 is available in the \$169 to \$199 price range, while the Quadro 2000 is available for between \$422 and \$499.

MSI Takes Wraps Off New Notebook

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Business Wire

October 25, 2010 Monday 4:00 PM GMT

LENGTH: 686 words

HEADLINE: ArcSoft Collaborates with AMD on OpenCL(TM) Technology with AMD Radeon(TM) HD 6800 Series Graphics and Debuts TotalMedia Theatre 5; Bring TotalMedia Theatre 5 Home This Holiday Season!

DATELINE: FREMONT, Calif.

BODY:

ArcSoft, Inc., the world-leading multimedia software provider, announced today its collaboration with AMD (NYSE: AMD) on OpenCL(TM) technology with AMD Radeon(TM) HD

ArcSoft Collaborates with AMD on OpenCL(TM) Technology with AMD Radeon(TM) HD 6800 Series Graphics and Debuts TotalMedia Theatre 5; Bring TotalMedia Theatre 5 Home This Holiday Season! Business Wire O

6800 series graphics and the pre-release of its best-selling multimedia player application, TotalMedia Theatre 5 this holiday season.

OpenCL(TM) (Open Computing Language) is an open **standard** and framework that allows programs to execute on a heterogeneous platform consisting of a CPU and GPU. Using the best hardware resources of the system, **OpenCL** adds new dynamics to multimedia applications to handle resource intensive tasks such as editing and converting high definition videos.

...on TotalMedia Theatre 5 and H.264 encoders across many applications such as TotalMedia ShowBiz, TotalMedia Studio, and MediaConverter 7. With OpenCL-based H.264 encoders, the encoding process takes the full capacity of the entire PC rather than being limited to the CPU processors, which makes the job more efficient. In addition, the OpenCL-based SimHD is now upgraded with ArcSoft's De-Noise and Dynamic Lighting technologies, and frame rate conversion. This allows users to enjoy a smoother and more vivid video playback.

"More and more consumers expect a seamless visual entertainment experience on their PC, and using open **standards** is an effective way to harness available system performance to help improve that experience," said Matt Skynner, corporate vice president, AMD Graphics. "As a leader in high-performance graphics, AMD has raised the bar for GPU compute with AMD Radeon HD 6800 series graphics. This technology, combined with various **OpenCL** based applications from ArcSoft, enables consumers to easily edit high-definition video, convert media files to mobile devices, and enjoy smooth playback of movies with amazing speed."

"Pure CPU computing is in the past. We are now entering an era of smart computing," said George Tang, ArcSoft's VP and General Manager of VHE group. "This implies to intelligently balance system's resources including utilizing GPU for general purpose computing. With AMD's dedication and great support, we have again reiterated our core components to take advantage of both GPU and CPU through the industry **standard OpenCL** APIs."

Optimized for compatibility with the new AMD Radeon HD 6800 series graphics, TotalMedia Theatre 5 will officially be released this holiday season with the following features:

Plays Blu-ray 3D(TM) movies and converts 2D movies to 3D in real-time

Includes online video streaming directly from popular streaming websites

Includes a powerful Media Manager to help you organize, view, and search for videos easily and quickly

Newly improved, OpenCL-based SimHD supports with De-Noise and increased frame-rate conversion

Provides a Smart Menu for browsing and bookmarking DVD and ...

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Copyright 2010 Business Wire, Inc.
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August 12, 2010 Thursday 4:01 AM GMT

AMD Spurs Software Development to Benefit from Heterogeneous Compute Architectures and APUs; ATI Stream SDK v2.2 Enables Next-Generation Computing Experiences; Delivers OpenCL(TM) 1.1 Support; Busine

LENGTH: 662 words

HEADLINE: AMD Spurs Software Development to Benefit from Heterogeneous Compute Architectures and APUs;
ATI Stream SDK v2.2 Enables Next-Generation Computing Experiences; Delivers OpenCL(TM) 1.1 Support;

DATELINE: SUNNYVALE, Calif.

BODY:

...example of how CPU and GPU technology continues to mature and usher in next-generation computing experiences, where voice, touch, gesture and facial recognition capabilities are common, everyday features," said Patricia Harrell, director of Stream Computing, AMD. "The enhancements in the ATI Stream SDK v2.2 are especially important due to the support for OpenCL 1.1, which is integral to the forthcoming AMD Fusion family of APUs. These tools allow the developer community to take advantage of heterogeneous computing architectures both today and tomorrow."

"As the premier provider of high-quality audio and video codec solutions, MainConcept has a shared vision with AMD to support open **standards such as OpenCL**," said Muzaffer Beygirici, managing director of MainConcept GmbH. "Our upcoming **OpenCL H.264/AVC Encoder** was built on ATI Stream technology and the **OpenCL standard**, and we believe ATI Stream-enabled GPU acceleration will be a compelling new feature in our customers' solutions."

ATI Stream SDK v2.2 delivers expanded support for operating systems, compilers, hardware and the latest industry standards, further streamlining application development and acceleration. New features include:

Support for the OpenCL 1.1 specification, ratified in June 2010, providing developers with the ability to take full advantage of the new features OpenCL 1.1 brings

Extended operating system support, including Ubuntu® 10.04, Red Hat® Enterprise Linux® 5.5

Increased hardware support ...

...

Collection 4.1 or later, Microsoft® Visual Studio® (MSVS) 2010 Professional Edition and Minimalist GNU (GCC 4.4) for Windows (MinGW)

Single-channel format support for OpenCL images, providing developers with greater flexibility to access the caches on the GPU

Support for OpenCL and DirectX® 10 interoperability increasing overall efficiency when displaying computed results to the user

Support for additional double-precision floating point routines in OpenCL kernels to enable greater computational accuracy in HPC and scientific based applications.

Resources

Download ATI Stream SDK v2.2

210275

OpenCL: A Nimble, Extendable Standard blog post

Visit AMD's **OpenCL Zone**

Follow ATI Stream updates on Twitter at @ATISStream

AMD Spurs Software Development to Benefit from Heterogeneous Compute Architectures and APUs; ATI Stream SDK v2.2 Enables Next-Generation Computing Experiences; Delivers OpenCL(TM) 1.1 Support; Business Wire
Visit the ATI Stream technology homepage for additional information

About AMD

Advanced Micro Devices (NYSE: AMD) is an innovative technology company dedicated to collaborating with customers and technology partners to ignite the next generation of computing and graphics solutions at work, home and play. For more information, visit <http://www.amd.com>.

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Copyright 2010 Business Wire, Inc.
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June 23, 2010 Wednesday 4:01 AM GMT

LENGTH: 1313 words

HEADLINE: Newest AMD FireStream(TM) GPU Compute Accelerators Deliver Almost 2x1 Single and Double Precision Peak Performance and Performance Per Watt Over Last Generation; AMD FireStream(TM) 9370 Offers Third Generation Double Precision Support; AMD FireStream(TM) 9350 is Industry's Only Single-Slot PCIe® Accelerator

DATELINE: SUNNYVALE, Calif.

BODY:

...up to 2.64 TFLOPS of compute power, the new AMD FireStream accelerators are ideal for HPC, cloud and enterprise-scale deployments that require advanced performance for handling today's highly parallel, compute-intensive workloads. Several AMD technology partners and OEMs plan to offer rack mounted servers and expansion systems featuring AMD FireStream 9350 and 9370 accelerators, including One Stop Systems and Supermicro.

"Heterogeneous systems in which high-performance GPU and x86 CPU technologies work in tandem can deliver enormous computational power," said Patricia Harrell, director, Stream Computing, AMD. "Industry **standards** like **OpenCL(TM)** are driving rapid adoption of heterogeneous architectures, and commercial customers deploying systems with AMD FireStream accelerators and AMD Opteron(TM) processors can immediately experience the benefits of the combined technologies."

...solutions are designed to deliver optimal compute performance and power efficiency. The AMD FireStream 9350 delivers 2.0 TFLOPS of single precision performance and 400 GFLOPS of double precision floating point performance in a single-slot, 150W solution with 2GB of GDDR5 memory, enabling breakthrough compute density. The AMD FireStream 9370 delivers up to 2.64

Newest AMD FireStream(TM) GPU Compute Accelerators Deliver Almost 2x1 Single and Double Precision Peak Performance and Performance Per Watt Over Last Generation; AMD FireStream(TM) 9370 Offers Third G

TFLOPS of single precision performance and 528 GFLOPS of double-precision performance, and includes 4GB of high-speed GDDR5 memory, at a maximum board power of 225 watts. In addition, the AMD FireStream 9350 and 9370 both support leading industry **standard** application interfaces³, including **OpenCL(TM)**, DirectX® 11 and OpenGL®.

The **OpenCL** industry **standard** programming language allows developers to preserve their source code investments and easily target multi-core CPUs, GPUs, and will be supported on the upcoming AMD Fusion APUs. With the ATI Stream Software Development Kit v2.1, the developer community can harness the combined compute power of ATI FireStream GPU compute accelerators and AMD Opteron(TM) processor-based platforms such as the AMD Opteron(TM) 4000 Series platforms announced today , and allocate workloads among both processors to achieve optimal application performance.

The AMD FireStream 9350 and 9370 GPU compute accelerators are scheduled to be available for purchase from AMD and its technology ...

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June 14, 2010 Monday 4:15 PM GMT

LENGTH: 1311 words

HEADLINE: Khronos Drives Momentum of Parallel Computing **Standard** with Release of **OpenCL** 1.1 Specification;
Industry Leaders Cooperate to Evolve Cross-Platform Open **Standard** for Heterogeneous Parallel Programming; **OpenCL** 1.1 Conformance Tests and C++ wrapper API also Released

DATELINE: BEAVERTON, Ore.

BODY:

Khronos(TM) Group today announced the ratification and public release of the **OpenCL(TM)** 1.1 specification, the latest version of the open, royalty-free **standard** for cross-platform, parallel programming of modern processors. **OpenCL** 1.1 provides enhanced performance and functionality for parallel programming in a backwards compatible specification that is the result of cooperation between industry-leading companies. **OpenCL** working group members include: AMD, Apple, ARM, Blizzard Activision, Broadcom, Codeplay, Electronic Arts, Ericsson, Freescale, Graphic Remedy, IBM, Imagination Technologies, Intel, Kestrel Institute, Los Alamos National Laboratory, Movidia, Nokia, NVIDIA, Petapath, Presagis, Qualcomm, Renesas, S3 Graphics, Seaweed Systems, Sony, ST-Ericsson, STMicroelectronics, Symbian, and Texas Instruments. Today Khronos also announced the release of a C++ wrapper API for use with **OpenCL**, and the immediate availability

Khronos Drives Momentum of Parallel Computing Standard with Release of OpenCL 1.1 Specification; Industry Leaders Cooperate to Evolve Cross-Platform Open Standard for Heterogeneous Parallel Programmin

of **OpenCL** 1.1 conformance tests. The **OpenCL** 1.1 specifications, online reference pages and reference cards are available at www.khronos.org/opengl/.

...programming flexibility, functionality and performance including:

- New data types including 3-component vectors and additional image formats;
- Handling commands from multiple hosts and processing buffers across multiple devices;
- Operations on regions of a buffer including read, write and copy of 1D, 2D or 3D rectangular regions;
- Enhanced use of events to drive and control command execution;
- Additional OpenCL C built-in functions such as integer clamp, shuffle and asynchronous strided copies;
- Improved OpenGL interoperability through efficient sharing of images and buffers by linking OpenCL and OpenGL events.

Quotes from Working Group Members

"The release of **OpenCL** 1.1 is coming at a perfect time, capitalizing on the rapidly growing interest in GPU computing across the industry," said Manju Hegde, corporate vice president, Fusion Experience Program, AMD. "AMD believes that to spur this growth and reassure ISVs and the software development community that they will get the maximum market potential for their products, it is critical for vendors to embrace a multi-vendor, multi-source interface and an industry **standard** programming model. As one of the most committed supporters of **OpenCL** through our ATI Stream Software Development Kit, AMD is poised to unleash the true potential of application acceleration with our AMD Fusion Family of APUs, scheduled for release in 2011. These APUs are designed to support **OpenCL** on both the GPU and the CPU, thereby providing an unmatched heterogeneous computing platform."

"ARM is committed to supporting OpenCL across a range of its products," said Pete Hutton, vice president technology and systems, Processor Division, ARM. "OpenCL 1.1 builds on the momentum of OpenCL and will accelerate innovation in high-performance compute systems containing GPUs, CPUs and other devices by ARM Partners."

"Recently, we are seeing definite increase in demand for OpenCL not only for normal applications but also for embedded applications," said Dr. Akihiro Asahara, operating officer, Software Solution Division at Fixstars Corporation. "OpenCL 1.1 adds more practicality and flexibility, which will surely help gain momentum for OpenCL's wide-spread use in the years to come."

"Intel is a strong supporter of open industry **standards** that create developer choice and foster innovation," said Elliot Garbus, vice president Intel Software and Services Group and general manager Visual Computing Software Division. "As a contributor to the **OpenCL** 1.1 specification, Intel is encouraged by its evolution as a programming model and excited about the promise of **OpenCL** to offer developers flexibility and the power to harness future parallel processing on Intel platforms."

"Graphic Remedy is proud to be part of the Khronos OpenCL group. We believe that OpenCL is becoming the leading API for the creation of parallel computing applications, which will increase

Khronos Drives Momentum of Parallel Computing Standard with Release of OpenCL 1.1 Specification; Industry Leaders Cooperate to Evolve Cross-Platform Open Standard for Heterogeneous Parallel Programmin

demand for robust debugging and profiling tools," said Avi Shapira, CEO at Graphic Remedy. "Graphic Remedy is committed to supporting the OpenCL developer community with gDEDebugger CL, the new OpenCL Debugger, Profiler and Memory analyzer; this solution will help companies and individuals make the most out of the parallel computing power exposed by current and future hardware."

"The use of ...

...weight is behind OpenCL 1.1, as evidenced by immediate availability of the driver on our website today, along with the industry's broadest set of tools for taking advantage of NVIDIA GPUs for general purpose computation."

Khronos OpenCL Members Speak and Demo at SIGGRAPH Los Angeles July 27-29, 2010

Members of the press and developers alike are invited to attend the BOF "Birds of a Feather" on Tuesday, 27 July, 2010 from 4:00 pm - 6:00 pm at the SIGGRAPH trade show at Los Angeles Convention Center, Room 402A. There the audience will meet designers and implementers of this significant **standard** for heterogeneous parallel programming on GPUs and CPUs, and learn how **OpenCL** inter-operates with OpenGL, enabling advanced, cross-platform, visual computing applications. Guests are also invited to view demos on the Khronos booth #1201 and pickup a free laminated reference card for a number of our APIs, including **OpenCL** and OpenGL. See more about Khronos Group at SIGGRAPH: <http://www.khronos.org/news/events/detail/siggraph-la-2010/>

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(TM), EGL(TM), **OpenCL**(TM), OpenMAX(TM), OpenVG(TM), OpenSL ES(TM), OpenKODE(TM) and COLLADA(TM). 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> .

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Computer Reseller News

June 1, 2010 Tuesday

SECTION: CUSTOM SYSTEMS; Pg. 50

LENGTH: 748 words

HEADLINE: Spreading The Fusion Message

BYLINE: Damon Poeter

BODY:

...ball of GPU computing. But Nvidia didn't. And when Nvidia commits to something, they put their all into it, Peddie said. So today, CUDA is by far the most widely used and robust programming platform for parallel computing that exists in the world.

So now AMD has its house in order. They've completed their smart fab strategy, the Intel lawsuit is behind them and now they're ready to get really rolling on GPU computing.

A major difference between the approaches by Nvidia and AMD to GPU computing is that the former has developed its proprietary CUDA framework, while the latter says it's committed only to open **standards** like the **OpenCL** heterogeneous programming language that can work on any vendor's hardware. Nvidia GPUs also support **OpenCL**, but CUDA programs will only run on Nvidia hardware.

Our strategy is to embrace open standards all the way through. We're comfortable that we'll have to win with our hardware. But even with that philosophy, you have to deal with the reality that GPU programming is still relatively new, Hegde said.

If you look at a GPU and a CPU and you want heterogeneous computing, quite frankly, it's not as easy to program a GPU as a CPU, though much progress has been made. So we've got some plans in place to simplify that process and kind of hide the complexity from the developer.

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April 9, 2010 Friday 8:00 AM EST

LENGTH: 1101 words

HEADLINE: MainConcept and AMD Collaborate to Accelerate High-Definition Video Encode; MainConcept H.264/AVC Codec Package Takes Advantage of ATI Stream Technology for GPU Acceleration

DATELINE: AACHEN, Germany and SAN DIEGO, April 9

MainConcept and AMD Collaborate to Accelerate High-Definition Video Encode; MainConcept H.264/AVC Codec Package Takes Advantage of ATI Stream Technology for GPU Acceleration PR Newswire April 9, 2010

BODY:

AACHEN, Germany and SAN DIEGO, April 9 /PRNewswire/ -- MainConcept GmbH, a wholly-owned subsidiary of DivX, Inc. (Nasdaq: DIVX) and one of the world's premier providers of video and audio codecs and software development kits (SDKs) to the consumer, broadcast and professional markets, today announced a strategic collaboration with AMD (NYSE: AMD) to accelerate digital video encode. MainConcept plans to leverage ATI Stream technology from AMD and **OpenCL(TM) standards** to accelerate the encoding capabilities within its H.264/AVC (Advanced Video Coding) Pro Encoder codec package by taking advantage of available graphics processors (GPUs) in PCs. MainConcept will be demonstrating this encode acceleration for the first time on AMD's latest professional graphics solution, the ATI FirePro(TM) V8800, at the 2010 NAB Show April 12-15 in Las Vegas, Nevada.

(Logo: <http://www.newscom.com/cgi-bin/prnh/20081124/LA48153LOGO>)

MainConcept intends to harness the compute power of GPUs, in addition to the multi-CPU support already enabled in H.264, to speed up the encoding process with advanced video coding. H.264/AVC is just one of the many industry standard video codecs supported by the MainConcept Codec SDK, which contains everything professional software developers need to integrate video and audio compression into their applications.

"MainConcept is committed to supplying a codec for every platform, and AMD can help them achieve this goal with our ATI Stream technology, enabled on AMD's consumer and professional graphics solutions*, and built on the **OpenCL(TM) industry standard** application programming interface," said Janet Matsuda, senior director, AMD Professional Graphics. "By choosing to accelerate encoding for H.264/AVC Pro Encoder with ATI Stream technology, not only is MainConcept helping its developers speed up the encoding process by tapping into the power of GPUs but they are also allowing the applications they develop to run on even more computing platforms."

Industry **standards** enable the seamless interoperability video professionals and developers experience today. As the developer community looks to harness the power and performance associated with heterogeneous architectures, industry **standards** are needed for developing applications capable of running on all of the available processors in a system. **OpenCL** is designed to enable developers to write vendor-neutral, cross-platforms applications capable of being accelerated by the most appropriate processors within a system, whether it is the CPU, GPU or others. This widely supported industry **standard** unlocks developers from vendor-specific implementations and gives them the freedom to choose.

"H.264 uses the latest innovations in video compression technology to provide incredible video quality from the smallest amount of video data, and numerous broadcast, cable, videoconferencing and consumer electronics companies consider it the video codec of choice for their new products and services," said Muzaffer Beygirici, Managing Director of MainConcept. "By collaborating with AMD to accelerate the encoding capabilities of our H.264/AVC codec package, we can provide our users with optimal compression and format conversion rates for digital video across a broad range of applications."

Please ...

ATI FirePro(TM) V8800 Professional Graphics with ATI Eyefinity Technology Supports up to Double the Display Real Estate with 2.6 Teraflops of Breakthrough Compute Performance in a Single Card; ATI Fir

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April 7, 2010 Wednesday 4:01 AM GMT

LENGTH: 2240 words

HEADLINE: ATI FirePro(TM) V8800 Professional Graphics with ATI Eyefinity Technology Supports up to Double the Display Real Estate with 2.6 Teraflops of Breakthrough Compute Performance in a Single Card;

ATI FirePro(TM) V8800 Professional Graphics with ATI Eyefinity Technology Supports up to Double the Display Real Estate with 2.6 Teraflops of Breakthrough Compute Performance in a Single Card

DATELINE: SUNNYVALE, Calif.

BODY:

...

designs, applications and images at once.

Speedy workflows: avoid time-wasting application-switching, window-sorting, mouse-clicking and scrolling.

Single desktop: support for an intuitive Graphical User Interface allows configuration of a single desktop surface across multiple displays.

Synchronized outputs: ATI Eyefinity technology works seamlessly with ATI FirePro(TM) S400 Synchronization Module, enabling up to four displays per graphics card to be synchronized at a time.

Support for industry standards

Next generation ATI FirePro professional graphics are designed for and ready to support leading industry **standard** application interfaces, including OpenGL®, **OpenCL(TM)** and DirectX® 11. Released by the Khronos Group in March, OpenGL® 4.0 includes a new tessellation feature that allows applications to amplify geometry, generating tessellated geometry based on incoming vertices and allowing professionals to take a rough object defined by only a few vertices and generate new vertices to smooth out the object and provide more detail. AMD has announced its support for OpenGL® through its beta driver for OpenGL® 4.0 and 3.3.

OpenGL® 4.0 also further improves the close interoperability with the **OpenCL(TM)** industry **standard** for accelerating computationally or visually intensive applications.

Next-generation ATI FirePro professional graphics are designed to accelerate **OpenCL(TM)** 1.0. Support for **OpenCL(TM)** 1.0 is available through AMD's ATI Stream software development kit, which allows developers access to both AMD GPU and x86 CPU processors in a workstation or PC.6

ATI FirePro(TM) V8800 Professional Graphics with ATI Eyefinity Technology Supports up to Double the Display Real Estate with 2.6 Teraflops of Breakthrough Compute Performance in a Single Card; ATI Fir

The latest generation of ATI FirePro professional graphics is hardware compliant with DirectX 11®, and ATI FirePro V8800 is the only professional graphics solution capable of supporting DirectCompute 11 today.

As the developer community looks to harness the power and performance associated with heterogeneous architectures, industry **standards** are needed for developing applications capable of running on all of the available processors in a system. Video is a highly data parallel application and AMD is actively collaborating with consumer and commercial software partners to accelerate transcoding. AMD regularly collaborates with middleware and other video codec providers, such as MainConcept, to help them take advantage of GPU acceleration technologies enabled by AMD's ATI Stream technology and the **OpenCL(TM) standard.6**

Assuring reliability

AMD works closely with leading application providers to optimize ATI FirePro professional graphics, and ATI FirePro professional graphics have been certified on more than 90 applications. All ATI FirePro professional graphics are tested against a battery of simulations and real-world scenarios to ensure compatibility and stability.

AMD also issues regular updates to its unified driver, delivering performance improvements, enhanced features and support across the ATI FirePro family.

Supporting Quotes

"Autodesk recognizes the importance of having our customers invest in a professional graphics solution," said Jim White, director of Global Alliances, Autodesk. "Together with ...

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December 3, 2009 Thursday 5:01 AM GMT

LENGTH: 626 words

HEADLINE: AMD and SiSoftware Collaborate on Development of an Industry Benchmark Suite for OpenCL(TM);

ATI Radeon(TM) HD 5870 Graphics Card Performs up to 2.7 Times Faster Than Most Powerful Competing Graphics Card Featuring Two GPUs

DATELINE: SUNNYVALE, Calif.

BODY:

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AMD (NYSE: AMD) today announced its involvement in the development of one of the first industry benchmark testing suites for **OpenCL(TM)**. Released by SiSoftware, the **OpenCL GPGPU**

AMD and SiSoftware Collaborate on Development of an Industry Benchmark Suite for OpenCL(TM); ATI Radeon(TM) HD 5870 Graphics Card Performs up to 2.7 Times Faster Than Most Powerful Competing Graphics

: benchmark suite is part of SiSoftware Sandra 2010, the latest version of the award-winning utility first introduced in 1997. The benchmark suite includes remote analysis, benchmarking and diagnostic features for PCs, servers, mobile devices and networks, and can be used to test **OpenCL** performance on ATI Stream technology.

W Heavy computational workloads have traditionally been processed
h on a CPU but the industry is shifting to a new computing paradigm
y that relies more on the GPU or a combination of GPU and CPU.

: **OpenCL** is the widely adopted industry **standard** for running parallel tasks on CPUs and GPUs using the same code. As the only hardware provider in the industry designing and delivering both high-performance CPU and GPU technologies, AMD is the only company providing a complete **OpenCL** development platform for the entire system.

W The developer community, ISVs and OEMs have been looking for
h a way to measure **OpenCL**-based system performance. The
o **OpenCL** benchmark suite from SiSoftware is a first step in giving
: the industry the tools it needs to accurately measure and assess system performance in order to make decisions with confidence.

B To test performance the SiSoftware **OpenCL** GPGPU benchmark
e suite runs computationally intense algorithms like the Mandelbrot
n set. Working with SiSoftware, AMD has optimized the
e performance of the **OpenCL** benchmarks for its GPU
fi implementations, and for some problems has demonstrated
ts significant performance advantages using AMD's ATI Stream
: Software Development Kit (SDK) for **OpenCL**. When compared to NVIDIA's CUDA running on its GeForce GTX 295 featuring two GPUs, the ATI Radeon(TM) HD 5870 graphics card with one GPU delivers up to 2.7 times faster performance on certain benchmark tests. For the "native float shader" results, the ATI Radeon 5870 posted a score of 1820 megapixels per second, compared to the GTX 295 at 680 megapixels per second¹. AMD and SiSoftware are currently collaborating on measurement for AMD's entire platform, including x86 CPUs.

R For more information about the **OpenCL** GPGPU benchmark from
e SiSoftware visit the SiSoftware Sandra 2010 website.

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AMD and SiSoftware Collaborate on Development of an Industry Benchmark Suite for OpenCL(TM); ATI Radeon(TM) HD 5870 Graphics Card Performs up to 2.7 Times Faster Than Most Powerful Competing Graphics

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¹Based on native float shader results of 1820 megapixels per second for AMD compared to 680 megapixels for NVIDIA on AMD Phenom(TM) II X4 940 processor-based system, 3 GHz, ASUSTek M3A79-T DELUXE, 4GB DDR2-1066, Windows® 7 64-bit Enterprise operating system.

AMD configuration: ATI Radeon(TM) HD 5870, 1024MB video memory, Memory Clock 1200 MHz, Engine Clock 850 Mhz, Driver: ...

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November 18, 2009 Wednesday 5:01 AM GMT

LENGTH: 1181 words

HEADLINE: AMD Introduces ATI Radeon(TM) HD 5970: Fastest Graphics Card in the World¹; Massive overclocking potential enables PC gaming enthusiasts to dominate their gameplay with DirectX® 11,² expand the game experience with ATI Eyefinity technology,³ and accelerate with ATI Stream technology⁴

DATELINE: SUNNYVALE, Calif.

BODY:

...on the way, including:
Battlefield Bad Company 2 from EA DICE
DiRT(TM) 2 from Codemasters, arriving December 1, 2009,
Aliens vs. Predator(TM) from Rebellion,
Update to The Lord of the Rings Online(TM) from Turbine,
Update to Dungeons and Dragons Online® Eberron Unlimited(TM) from Turbine.

New features and functionality of ATI Stream technology allow users to harness the ATI Radeon(TM) HD 5970 graphics card to enhance their computing experience, helping to improve the performance of enabled media, entertainment and productivity applications.⁴ ATI Stream technology and the HD 5970 support both Direct Compute 11 and **OpenCL** industry **standards** for application acceleration.

Delivering full-fledged performance when needed, the ATI Radeon(TM) HD 5970 also leads in power efficiency by automatically powering down unused GPU resources when not in use, resulting in idle desktop power consumption as low as 42 watts.⁵

AMD Introduces ATI Radeon(TM) HD 5970: Fastest Graphics Card in the World1; Massive overlocking potential enables PC gaming enthusiasts to dominate their gameplay with DirectX® 11,2 expand the game e

The ATI Radeon(TM) HD 5970 is supported by a wide range of add-in-board companies, including ASK, Asus, Club 3D, Diamond, Gigabyte, High Tech, MSI, Sapphire, Tul/Power Color, Visiontek and XFX.

To celebrate the launch of the ATI Radeon(TM) HD 5970 and to conclude ...

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November 16, 2009 Monday 1:30 PM GMT

LENGTH: 1567 words

HEADLINE: Khronos Demonstrates OpenCL Momentum at SC09; OpenCL Conformance Tests Now Available With Conformant Products Shipping; Working Group Membership Expands to Thirty-Three High-Performance Computing, Gaming, Middleware, System and Silicon Vendors

DATELINE: PORTLAND, Ore.

BODY:

Khronos(TM) Group, an industry consortium with more than 100 members working together to create open **standards** for authoring, accelerating and accessing visual computing, today announced strong industry support and a wide range of shipping products utilizing **OpenCL(TM)** at SC09 (an international conference for high-performance computing). A number of demonstrations and tutorials from Khronos Group members highlighting the power and scalability of **OpenCL** will also be a major part of SC09.

OpenCL is the open, royalty-free **standard** for general-purpose parallel programming across CPUs, GPUs and other processors. **OpenCL** provides software developers portable and efficient access to the full power of a wide range of systems including high-performance compute servers, desktop computer systems and handheld devices. The **OpenCL** 1.0 specification and more details are available at www.khronos.org/opencv/.

OpenCL Conformant Products Shipping

Khronos released a conformance suite for the OpenCL 1.0 specification in May 2009 that exhaustively tests both the functionality and numerical accuracy of OpenCL implementations before they are licensed to use the OpenCL trademark. A number of shipping products from working group members have successfully passed OpenCL conformance including products from AMD, Apple and NVIDIA. The current list of conformant products can be found at: <http://www.khronos.org/adopters/conformant-products/#topencl>

Khronos Demonstrates OpenCL Momentum at SC09; OpenCL Conformance Tests Now Available With Conformant Products Shipping; Working Group Membership Expands to Thirty-Three High-Performance Computing, Gamin

"By enabling cross-platform development for heterogeneous architectures, **OpenCL** is helping to bring GPU compute capability to mainstream applications," said Patricia Harrell, director of stream computing at AMD. "AMD fully supports the advantages of industry **standard** development through its ATI Stream SDK v2.0, an **OpenCL** 1.0 compliant solution for both ATI GPUs and x86 CPUs."

"NVIDIA cares deeply about ensuring that OpenCL developers have the tools they need to easily develop and deploy mainstream applications on more than 150 million NVIDIA OpenCL 1.0-capable GPUs," said Sanford Russell, general manager, GPU Computing software at NVIDIA. "Our latest R195 driver provides the industry's most complete support for OpenCL 1.0 with NVIDIA's OpenCL Visual Profiler and new OpenCL extensions including double precision, ICD and imaging. We are very excited about the increased momentum that OpenCL is creating behind GPU Computing."

OpenCL ...

...group has grown steadily since the release of the OpenCL 1.0 specification, with a rich diversity of companies helping to evolve and support the specification. Membership in the OpenCL working group now includes thirty-three market leaders: Activision Blizzard, AMD, Apple, ARM, Broadcom, Codeplay, Electronic Arts, Ericsson, Freescale, Fujitsu, GE, Graphic Remedy, HI, IBM, Intel, Imagination Technologies, Los Alamos National Laboratory, Motorola, Movidia, Nokia, NVIDIA, Petapath, Presagis, QNX, Qualcomm, S3, Samsung, STMicroelectronics, Takumi, Texas Instruments Incorporated (TI), Toshiba, Vivante and ZiiLABS (formerly 3DLABS).

"Codeplay is very excited about **OpenCL** because it enables us to adapt our development tools to allow developers to accelerate their C++ software on any device that supports **OpenCL**," said Andrew Richards, CEO of Codeplay. "By providing a **standard** acceleration API, **OpenCL** enables software developers to invest in GPGPU with confidence that their investment is future-proof."

"IBM is encouraged by the rapid acceptance of support of the Khronos Group's OpenCL 1.0 specification, and is pleased to announce the availability of the OpenCL Development Kit for Linux on Power on AlphaWorks," said Chris Maher, vice president HPC Development at IBM. "IBM recognizes the significance of a portable, high performance, heterogeneous programming language and with this technology preview will enable programmers to easily explore these new programming paradigms on Power and Cell/B.E. Processors."

"We've been working with several of our key licensees and application middleware partners ... support across a significant number of our POWERVR SGX IP cores."

"Our development experience at Los Alamos National Laboratory with adapting codes to the Roadrunner supercomputing architecture exposed several areas where there were no obvious tools or techniques that would allow us to maintain portability across the variety of platforms that we must routinely support to fulfill the Laboratory's stewardship mission," said Ben Bergen, Evolving Applications and Architectures Team, Los Alamos National Laboratory. "Initial proof-of-concept experiments with the OpenCL framework make us optimistic that OpenCL can address many of the challenges that we will be facing as the HPC landscape evolves into the future."

"TI applauds these **OpenCL** milestones, as they reiterate the opportunities this heterogeneous **standard** brings to multiple markets," said Ameet Suri, marketing manager, OMAP product line, wireless business unit, TI. "**OpenCL's** portable, cross platform and high-performance framework

Khronos Demonstrates OpenCL Momentum at SC09; OpenCL Conformance Tests Now Available With Conformant Products Shipping; Working Group Membership Expands to Thirty-Three High-Performance Computing, Gamin

pairs with TI's OMAP applications processors to create a new world of mobile user experiences, and ensures that developers have full access to the parallel and heterogeneous compute capabilities like multiple CPU, GPU, DSP and other imaging accelerators provided by the underlying OMAP platform that will shape the future."

"Many of our licensees are looking to maximize the potential of embedded GPUs for demanding computing tasks that will differentiate their SoC solutions," said Wei-Jin Dai, president and CEO of Vivante Corporation. "Vivante is providing native support for OpenCL as a driver for unlocking the power of our GPUs as a compute element in a wide variety of embedded applications."

OpenCL Sessions at SC09:

The Khronos Group is pleased to participate at SC09 in trade show booth #242 and at multiple OpenCL sessions:

Tutorial: OpenCL - A Standard Platform for Programming Heterogeneous Parallel Computers
Date: Monday, 16 November 2009, 1:30PM - 5:00PM
Speakers: Tim Mattson - Intel, Ian Buck - NVIDIA, Mike Houston and Ben Gaster - AMD

BOF (Birds of a Feather): Can OpenCL Save HPC?
Date: Wednesday, 18 November 2009
5:30PM - 7:00PM
Speakers: Tim Mattson - Intel, Ben Gaster - AMD, John Stone - University of Illinois at Urbana-Champaign and Marcus Daniels - Los Alamos National Laboratory
Moderator: Ben Bergen, Computational Physics, Los Alamos National Laboratory

More details of OpenCL sessions at SC09 can be found at: [http:// ...](http://...)

...pdf .

About OpenCL

OpenCL defines a high-performance, portable parallel programming abstraction to accelerate a wide range of applications, including consumer, media, scientific and HPC solutions. By creating an efficient, close-to-the-metal programming interface, OpenCL is the foundation layer of a parallel computing ecosystem of platform-independent tools, middleware and applications. OpenCL consists of an API for coordinating parallel computation across heterogeneous processors and a cross-platform kernel programming language with a well-specified computation environment.

About The Khronos Group

The Khronos Group is an industry consortium creating open **standards** for authoring, accelerating and accessing visual computing. Khronos **standards** include OpenGL[®], OpenGL[®] ES, WebGL(TM), **OpenCL**(TM), OpenMAX(TM), OpenVG(TM), OpenSL ES(TM), OpenKODE(TM), OpenWF(TM) and COLLADA(TM). 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 www.khronos.org .

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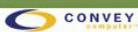
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Applications

August 08, 2011

AMD Releases Updated **OpenCL** Software Development Kit

SUNNYVALE, Calif., Aug. 8 -- AMD today announced availability of the AMD Accelerated Parallel Processing (APP) Software Development Kit (SDK) v2.5. Featuring advances in CPU to GPU data throughput, the latest version of the APP SDK provides developers a solid foundation to take full advantage of Accelerated Processing Units (APUs), including the latest AMD A-Series APUs offering brilliant HD graphics, supercomputer-like performance and All-Day battery life.

The AMD APP SDK helps developers quickly and easily tap into the power of GPU compute and parallel processing in heterogeneous computing platforms, building on the **OpenCL industry standard** to help developers reach a broader market by writing applications that run on a variety of device form factors.

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applications that run on a variety of device form factors.

The updated AMD APP SDK v2.5 delivers a key performance enhancement that reduces CPU to GPU bandwidth limitations, achieving effective data transfer rates as high as 15GB per second with the latest AMD A-Series APUs. In addition to raw performance, AMD A-Series APUs also enable advanced capabilities that can greatly enhance the computing experience such as gestural interfaces, multi-monitor support, 3D entertainment and real-time image stabilization.

"Improving performance and programmability on AMD platforms is a key initiative for us, and we work closely with developers to help us make the APU the best possible development platform," said Manju Hegde, corporate vice president, AMD Fusion Experience Program. "With these latest SDK refinements, we are supporting continued growth of the ecosystem and building on the momentum generated by the successful AMD Fusion Developer Summit held in June of this year."

"With the introduction of the AMD A-Series APUs and these new enhancements to the SDK, AMD is removing hardware barriers and reducing coding complexity to help developers build immersive computing experiences," said Graham Brown, chief technology officer, Corel Corporation. "Leveraging open standards, AMD has created a comprehensive platform developers can use to deploy all available compute power and deliver a significantly enhanced experience to multimedia consumers."

Other features of the AMD APP SDK v2.5 include enhancements to the **OpenCL** runtime designed to enable more efficient use of available GPU compute capabilities by reducing kernel launch times and PCIe transfer overheads.

In addition, the AMD APP SDK provides broad multi-GPU support on Windows platforms including support for APU plus discrete GPU that enables compute performance scaling across multiple GPUs, as well as AMD PowerXpress technology support for APU plus discrete GPU.

The AMD APP SDK is being used by developers who have entered the AMD **OpenCL** Coding Competition, being run by software development leader TopCoder. This contest, which was announced in June at the AMD Fusion Developer Summit, is open to software developers worldwide, and up to \$50,000 in prizes will be awarded to winning submissions. For more information, visit <http://amd.topcoder.com>.

For a full list of enhancements and to download AMD APP SDK v2.5, visit <http://developer.amd.com/sdks/AMDAPPSDK/downloads/Pages/default.aspx>.

About AMD
AMD is a semiconductor design innovator leading the next era of vivid digital



Feature Articles

Startup Aims to Transform HPC Programming

Indiana-based MNB Technologies is a small company with big aspirations. The soon-to-be-public corporation is developing an expert-systems based development suite designed to greatly simplify the programming of HPC accelerators, in particular FPGAs and GPU. To that end, the company recently announced the beta availability of its flagship product, hpcARCHITECT. [Read more...](#)

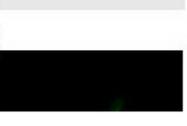
NSF's Seidel: 'Software is the Modern Language of Science'

Edward Seidel, the former director of the NSF's Office of Cyberinfrastructure, told attendees at TeraGrid '11 that after more than four centuries of science being conducted at a painstakingly slow pace, today's communications



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AMD is a semiconductor design innovator leading the world in video 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 <http://www.amd.com>.

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IBM Bails on Blue Waters Supercomputer

IBM has pulled the plug on Blue Waters, the 10-petaflop supercomputer that was to be delivered to NCSA. According to a joint statement issued by IBM and NCSA over the weekend, the contract was officially terminated on August 6, citing "increased financial and technical support by IBM beyond its original expectations."

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