

Widespread Adoption of NVIDIA CUDA Accelerates Broadcast & Film Production

NVIDIA's Parallel Computing Architecture Driving Growing List of Groundbreaking Video Processing Solutions

AMSTERDAM, THE NETHERLANDS -- International Broadcasting Convention (IBC) 2010 -- NVIDIA (Hall 7, Stand 7.J38) announced today that a growing range of software for broadcast and film production professionals is harnessing its [NVIDIA CUDA™](#) parallel computing architecture, which enables dramatic increases in computing performance by tapping into the power of [NVIDIA® Quadro®](#) and [Tesla™](#) graphics processing units (GPUs).

Independent software vendors (ISVs) such as Adobe, Ambrado, Blackmagic Design, BroadMotion, Cinnafilm, Elemental Technologies, Industrial Light & Magic (ILM), Iridas, MainConcept, Microsoft Corp., and TDVision are using NVIDIA GPU technology. They are using its speed and power to provide solutions for video encoding and decoding, visual effects (VFX) creation, 3D stereoscopic video processing, and color grading and correction.

"The film and broadcast industry is highly competitive, and the demands for providing even richer imagery, including stereoscopic 3D, are only increasing," said Jon Peddie, president of Jon Peddie Research, the multimedia industry's research firm in California. "CUDA is a remarkable architecture that utilizes the GPU to accelerate processes crucial to film and video production, such as encoding, color compression and effects simulation -- we are going to see things we never saw before."

CUDA Powers Visual Effects Creation

"Our customers come to us for breakthrough visual effects that have never been seen before, from 150 foot waves to fire that can be interactively manipulated within a scene," said Richard Kerris, CTO, [Industrial Light & Magic](#). "NVIDIA's GPU technology and CUDA, more specifically, have played a significant role in how we do our work. We're seeing improvements on simulation turnaround times that in the past would have taken hours, even days, and are now in some cases, down to minutes."

[Cinnafilm](#), (Stand 1.C61, Harmonic Inc., and Stand 7.A20, Quantel Ltd.) a leader in GPU-based image optimization and conversion, is utilizing NVIDIA CUDA for their Dark Energy Software Suite and Dark Energy Plug-Ins, enabling features such as standards/format conversions, video retiming, noise and dust removal, grain management, film simulation and other impressive visual effects up to 4K.

CUDA Makes Stereo 3D Work Flow and Enriches Color

[Iridas](#), (Stand 7.H11) is a leading provider for color grading, playback, Stereo 3D and RAW processing. Iridas SpeedGrade, FrameCycler and MetaRender leverage NVIDIA GPUs to provide an end-to-end postproduction workflow from onset to finishing, with a specific focus on universal processing of RAW files originating from digital cinema cameras.

"As one of the earliest users of NVIDIA GPU processing in the industry, the impact the latest generation of CUDA technology brings to the table is truly dramatic," said Lin S. Kayser, CEO, Iridas. "CUDA allows us to run advanced image processing algorithms in real time, which, by comparison, would take minutes to render on today's fastest CPUs."

CUDA Accelerates Video Encoding and Decoding, including new 3D-based Solutions

[Adobe](#) (Hall 7, H.23) recently introduced Adobe® Creative Suite® 5 software for virtually every creative workflow including designers, photographers and video editors. Adobe® Premiere® Pro CS5 software incorporates the NVIDIA CUDA parallel processing architecture, so NVIDIA Quadro GPUs and their hundreds of CUDA cores enable film and video professionals to work unconstrained, unleashing the real-time video editing and effects processing capabilities of Adobe's leading non-linear editor.

[Ambrado](#) (Stand 11.C21, IDX Technology) designs, develops, and manufactures best-quality video processing solutions used in high-quality HD broadcast cameras and tapeless studio recording systems.

The [Ambrado SR-2000 SuperRES Converter system](#), powered by the latest NVIDIA Fermi-based Quadro GPUs, is a CUDA architected SD to true HD up-down converter. SuperRES technology with Ambrado proprietary image processing algorithms produces superior video quality compared to standard up-down converters.

[Blackmagic Design](#) (Stand 7.B25) creates advanced video editing products, video converters, routers, color correctors, film restoration software and waveform monitors for the feature film, post production and broadcast industries. Blackmagic Design's CUDA-optimized DaVinci Resolve, built on the NVIDIA CUDA architecture, is the industry standard for color correction, supporting more real time color correction than any other system. Accelerated with NVIDIA GPUs, all of the processing is always in real-time, even native 4K resolutions, stereoscopic 3D and real time grading direct from RED raw R3D.

[BroadMotion](#) develops and licenses high-performance JPEG2000 encoders and decoders for digital cinema and video devices. Combined with NVIDIA Quadro GPUs with CUDA technology, BroadMotion's JPEG2000 2K DCP decoder platform can deliver real-time processing of DCI-compliant 2K bitstreams at 24 frames per second, an industry first on general purpose processors.

"Until now, processing digital cinema 2K streams required expensive, dedicated hardware," said Jeff Brooks, CEO of Broadmotion. "The massively parallel processing power of CUDA technology enables BroadMotion to deliver a DCI-compliant solution for 2K JPEG2000 decoding on the NVIDIA Quadro GPUs. This creates new opportunities to deploy cost-effective solutions for digital cinema vendors."

[Elemental Technologies Inc.](#) (Stand 13.C25) is the leading provider of massively parallel processing solutions for broadcast and online video decoding, encoding and transcoding. At IBC, Elemental is demonstrating its new NVIDIA CUDA-based Elemental Live solution as part of the Quadro Digital Video Pipeline, an end-to-end solution for GPU-accelerated acquisition, processing and delivery of standard and 3D broadcast video. The system will simultaneously encode, panelize and segment streams, saving valuable formatting time and eliminating traditional hardware.

"Elemental's product line leverages NVIDIA GPUs for compute-intensive video processing and conversion tasks," said Keith Wymbs, VP of marketing, Elemental Technologies. "3D encoding overwhelms the computational capabilities of most hardware platforms, but our solution shows that our CUDA-based Elemental Live can support 1080p 3D HD processing while simultaneously creating additional outputs for multiscreen adaptive bitrate delivery."

[MainConcept GmbH](#) (Stand 2.C50) is a leading provider of software development kits for audio and video encoding, decoding, transcoding and streaming applications as well as codec plug-ins for key third party applications that enhance digital media workflows. MainConcept has implemented NVIDIA CUDA technology in its new CUDA H.264/AVC Encoder 1.0 as well as the Codec Suite 5.0 plugin for Adobe Premiere Pro CS5, both of which use NVIDIA GPUs for up to 10x faster encoding speed than possible on a CPU alone.

"Professional MainConcept customers can now easily take advantage of NVIDIA Quadro and Tesla GPUs for astounding performance improvements that outperform any other currently available H.264 codec," said Muzafer Beygirci, Managing Director of MainConcept. "Because of the mature CUDA eco-system, we were able to deliver our GPU-optimized products in record time and look forward to even more optimizations in the future."

[Microsoft](#) (Topaz Lounge) and [Microsoft Expression Encoder 4 Pro](#) allow users to quickly and easily encode both live and pre-recorded video in a wide variety of file formats. With Expression Encoder, video production pros can customize their video and publish it to a Web server, guaranteeing viewers a rich, pixel-perfect media experience. Expression Encoder sets itself apart by enabling high-performance acceleration of H.264 output formats using NVIDIA GPUs with CUDA technology, far surpassing the performance capability of CPU-only solutions.

"When it comes to HD video encoding for professional video applications, time is money," said Eric Zocher, General Manager for Expression at Microsoft Corp. "By collaborating with NVIDIA, Microsoft helps deliver a quality performance advantage with Expression Encoder."

[TDVision Systems, Inc.](#) provides a complete acquisition, encoding, decoding and visualization platform for true 3D HD video. TDVision utilizes the NVIDIA Digital Video Pipeline to provide Full HD 3D to the home through CATV, IPTV, and Blu-ray. Its 2D+Delta system uniquely encodes stereoscopic video by comparing the left and right stereoscopic views and taking advantage of the redundancies between them, resulting in a reduction of bandwidth usage and huge cost savings.

"By utilizing the power of NVIDIA Quadro pro graphics and CUDA, we can perform very advanced mathematical processes to provide both a 2D and 3D signal on one channel," said Ethan Schur, CMO, TDVision Systems. "This offers content providers the ability to transmit the highest quality 3D, up to 1080p at 60 frames per second per view, directly to the home, while still ensuring backward compatibility on 2D legacy decoders."

[The Foundry](#) (Stand 7.J18), a leading provider of visual effects software, is utilizing the CUDA parallel processing architecture in its new Kronos retimer for Adobe AfterEffects. In addition, its Mari texture painting software is designed to utilize the full line of Quadro GPUs, leveraging the hundreds of processing cores of the new NVIDIA Fermi architecture and their massive framebuffers.

These new NVIDIA CUDA-based solutions powered by NVIDIA GPUs are being featured at IBC 2010, September 10-14, 2010 at the RAI Centre in Amsterdam. Visit NVIDIA at Hall 7, Stand 7.J38. To learn more, visit: www.nvidia.com/quadro.

Follow NVIDIA Quadro on [YouTube](#), and Twitter: [@NVIDIAQuadro](#).

About NVIDIA

NVIDIA (NASDAQ: NVDA) awakened the world to the power of computer graphics when it invented the GPU in 1999. Since then, it has consistently set new standards in visual computing with breathtaking, interactive graphics available on devices ranging from tablets and portable media players to notebooks and workstations. NVIDIA's expertise in programmable GPUs has led to breakthroughs in parallel processing which make supercomputing inexpensive and widely accessible. The company holds more than 1,100 U.S. patents, including ones covering designs and insights which are fundamental to modern computing. For more information, see www.nvidia.com.

Certain statements in this press release including, but not limited to, statements as to: the benefits, features, impact and capabilities of NVIDIA GPUs and NVIDIA CUDA architecture; expertise in visual computing and parallel processing; and the impact of the company's patents on modern computing are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; the impact of technological development and competition; development of more efficient or faster technology; design, manufacturing or software defects; changes in consumer preferences and demands; customer adoption of different standards or our competitor's products; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems as well as other factors detailed from time to time in the reports NVIDIA files with the Securities and Exchange Commission including its Form 10-Q for the fiscal period ended August 1, 2010. Copies of reports filed with the SEC are posted on NVIDIA's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

© 2010 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, CUDA, Quadro, and Tesla are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries. Other company and product names may be trademarks of the respective companies with which they are associated. Features, pricing, availability, and specifications are subject to change without notice.

About NVIDIA

Since 1993, [NVIDIA](#) (NASDAQ: NVDA) has pioneered the art and science of [visual computing](#). The company's technologies are transforming a world of displays into a world of interactive discovery — for everyone from gamers to scientists, and consumers to enterprise customers. More information at <http://nvidianews.nvidia.com/> and <http://blogs.nvidia.com/>.

availability, and specifications are subject to change without notice.

Media Contacts

Mark Priscaro

(408) 486-2438

mpriscaro@nvidia.com

George Millington

+1 408 562 7226

gmillington@nvidia.com

Jens Neuschäfer

+49 89 628350015

jneuschaef@nvidia.com