



With Imagination

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Imagination enables developers to use 3D navigation data in new SDK

The latest version of Imagination's POWERVR *Insider* software development kit (SDK), version 2.8, includes a new tutorial showing developers how to take full advantage of graphics acceleration using OpenGL ES2 to display 3D map and advanced visual guidance data in graphics-rich applications.

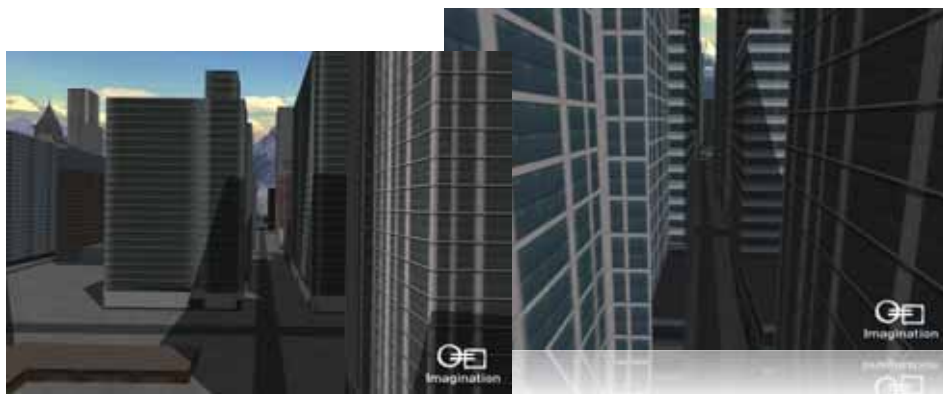
The tutorial enables the use of any 3D map data and includes comprehensive sample code provided by NAVTEQ for using most forms of available street mapping data in applications and a complementary white paper that explains efficient navigation rendering techniques and tools for how to compile the data.

NAVTEQ's support means developers can also join the NAVTEQ Network for Developers™ (www.NN4D.com) to gain access to more extensive data sample sets, and receive technical support.

Says Tony King-Smith, VP marketing, Imagination: "There's a considerable community of developers using our SDK who have extensive experience in

3D gaming or UI and would like to use that skill-set to create apps. This update to our SDK will help enable crossover into new markets, as will high-quality, sample 2D and 3D map data from an industry leader like NAVTEQ."

"We have been working closely with Imagination so that developers new to LBS have access to high-quality, realistic data sets and comprehensive tutorials to help support their application development needs," said Marc Naddell, vice president, partner and developer programs, NAVTEQ®. "With this new SDK, vehicle and pedestrian navigation experiences will be enhanced by the growing range of 2D and 3D visual content in NAVTEQ map data."



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LG Optimus Mach



Samsung Galaxy S

POWERVR SGX554 MP multiprocessor graphics IP

Imagination's POWERVR SGX554 is a high performance graphics core for embedded and mobile applications with full multiprocessor capability and support for Direct X9 level 3.

POWERVR SGX554 is the latest member of Imagination's POWERVR Series5XT family which is poised to bring new levels of performance to mobile and embedded graphics. POWERVR SGX554 can be implemented as a high-performance 8-pipe single core, or in multiprocessor (MP) configurations of between 2 and 16 cores (16 to 128 pipes).

This latest POWERVR Series5XT core will deliver new levels of embedded graphics capabilities. SGX554 pushes the upper boundaries of performance in power and cost-constrained embedded environments, while building on our unrivalled portfolio of APIs across every significant embedded and desktop operating system. What's more our licensees including Intel have been shipping fully accelerated Direct X9 for more than three years in millions of units, so SGX554 will benefit from the maturity of our DX9 drivers.

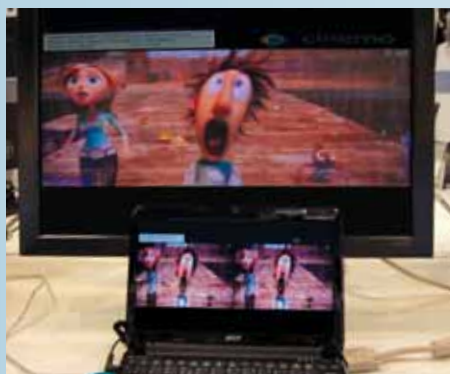


Coming soon, high-quality stereoscopic 3D!

When most people think of Stereoscopic 3D (S3D) they only consider the video aspect, but in fact a wide range of video, display and graphics IP is required in these new products.

Imagination POWERVR FRC frame rate conversion cores provide advanced image enhancement and a seamless S3D viewing experience with no frame judder.

FRC270 is the world's smallest FRC (Frame Rate Conversion) solution, capable of full HD at 240Hz. It has been optimized to provide full stereo 1080p60 output from typical 1080p24 stereo sources (e.g. Blu-ray 3D – Profile 5).



Today's FRC technology provides enhancement of S3D video content at HD resolutions. Imagination anticipates growing demand for its FRC solutions to complement VXD video decoding IP offerings for S3D.

The multi-stream video decoding capabilities of Imagination's POWERVR VXD make it ideally suited to both active and passive S3D, where the realistic 3D effect is created using two fields, each containing almost identical images. However, VXD is capable of going far beyond the requirements of S3D video (where the two streams are in identical source formats) by being able to decode multiple streams of differing formats for applications such as dual screen output of multiple video sources or picture-in-picture HD. This enables the capabilities of VXD video decoders to be far more useful across many applications compared to other S3D video decode solutions that are only designed to decode S3D content.

VXD support for further capabilities useful for S3D applications, are expected to debut later in 2010, including key new technologies such as H.264 MVC (Multiview Video Coding), which enables multiple view point television, advanced

S3D video imaging and immersive teleconferencing.

At CES in January 2011 Imagination also showed the powerful S3D rendering capabilities of its POWERVR SGX graphics acceleration family.

High performance POWERVR SGX graphics acceleration cores are ideally suited to S3D graphics, using either single or multiprocessor cores for resolutions up to full 1080p HD, and are capable of supporting all commonly used S3D formats such as frame sequential, side-by-side, top-bottom and interlaced.

Using SGX it is possible to quickly upgrade existing 3D content to deliver full S3D, bringing new realism to 3D games and navigation, and exciting new possibilities for user interfaces in a wide range of applications.

The additional workload required for S3D places significant demands on the graphics processor – and POWERVR visual IP is more than up to the task. Imagination looks forward to seeing S3D as another key feature used by a broader base of applications for mobile phones, DTVs, STBs and other products in the next few years.

Android Invasion

The META multi-threaded processor family, including META connected application platform solutions, now has Android™ support.

The complete Google Android OS (Operating System) has been ported to run on the META Linux kernel and offers full SMP (Symmetric Multi-Processor) and hotplug features. Android for META features an optimized port of the Dalvik VM (Virtual Machine) written especially for META.

Imagination's connected solutions, which combine META processor and ENSIGMA connectivity technologies, are designed to power the 'Internet Everywhere' generation of consumer electronics.



Flow Technology

Imagination Technologies is bringing to market Flow, a new portfolio of enabling technologies for cloud connectivity. Imagination's Flow technology already powers its PURE division's market-leading Flow range of connected audio products.

Flow technology includes highly-integrated licensable hardware based on Imagination's market-leading META and ENSIGMA IP and supporting software solutions, complemented by a range of internet-based technologies and a rapidly expanding portfolio of cloud-based resources and services together with access to an extensive and growing ecosystem of partners' services and content.

With Imagination's Flow technology, the company will enable the next wave of ubiquitous connectivity in all manner of consumer, industrial and embedded products. Bringing together teams capable of creating a truly connected product requires such an incredibly broad range of engineering and

commercial skills that it is usually not viable for all but the biggest industry players – until now. Imagination expects that Flow technology will usher in a new era of diverse, mass market cloud connectivity, enabling the creation of products never before possible.

Says Paul Smith, GM, PURE: "A major contributing factor to the commercial success of our Flow products has been the content, services and infrastructure enabled and provided by Imagination's Flow technology. Having this solution available to the wider industry is certain to accelerate the growth of the overall internet-connected product market, and we anticipate significant growth in customers for our connected audio products and services as a result."



Renesas shows POWERVR SGX MP enabled SoC

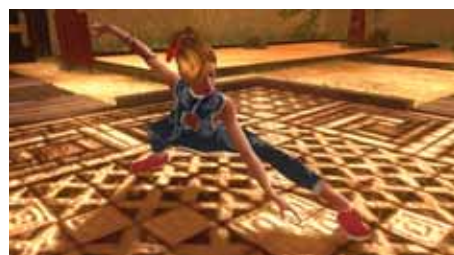
Imagination Technologies' partner Renesas Electronics Corporation has debuted a new SoC (System-on-Chip) with POWERVR SGX MP (multi-processor) graphics. The SoC delivers impressive levels of mobile and embedded graphics performance, over 5x that of the best current generation devices.

The Renesas mobile applications processor delivers a new level of graphics compute density with significantly enhanced performance per mm² and per mW. The device, incorporating Imagination's POWERVR Series5XT MP graphics technology is being formally launched at MWC 2011.

Imagination CEO Hossein Yassaie says: "Customer demand for advanced graphics, essential for console-class gaming and engaging user interfaces, and the debut of GPGPU APIs like OpenCL, is driving the required compute density of GPUs in mobile and embedded products on a dramatic upward path. Users will not settle for

'just good enough' graphics – they are actively choosing products that deliver the very best in UI, media, gaming and navigation. This new processor from Renesas will deliver the capabilities to drive mobile and embedded graphics devices to power the next level of graphics-rich user experiences."

Shinichi Yoshioka, COO of Renesas Mobile Corporation, the newly established spin off of Renesas Electronics Corporation which has taken ownership of the Multimedia Processor and Platform Business, says: "We see a strong demand for ever increasing graphics performance to support the exciting, rich user interface applications becoming standard on smartphones, car-infotainment systems and many other high performance products used in all walks of life. The adoption into Renesas processors of POWERVR SGX543 MP2, with its best-in-class graphics performance, will enable our customers to develop attractive, leading edge products to meet such market needs."



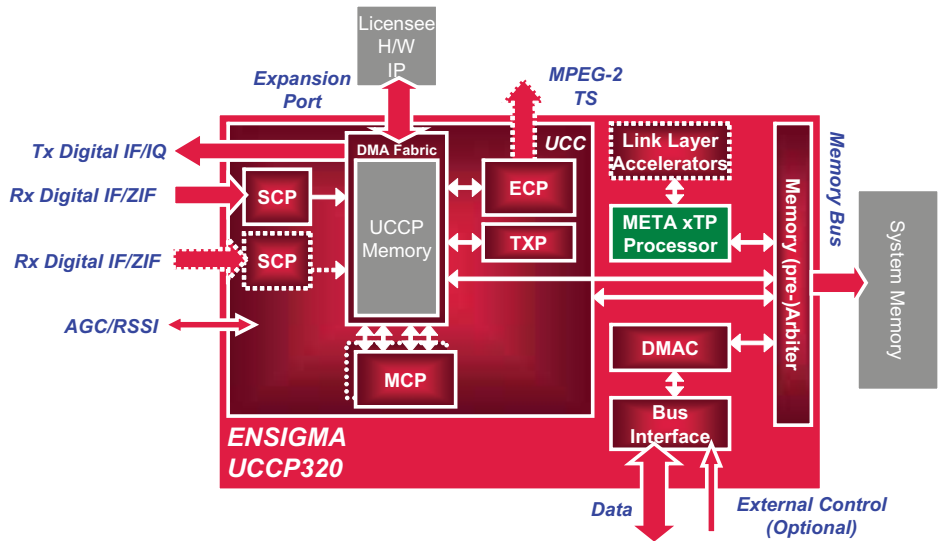
POWERVR SGX MP has full backward compatibility with current POWERVR SGX cores enabling the work of our extensive POWERVR Insider ecosystem, which has deployed nearly half a million apps onto the existing 400+ million unit POWERVR user-base, to continue to evolve seamlessly into the next generation of graphics-rich products while being stimulated by SGX MP to take their content to the next level of performance.

More than 10 SoCs utilizing multi-processor POWERVR SGX MP cores are currently in design or in silicon.

SoC with Integrated ENSIGMA based Wi-Fi and TV

Imagination recently demonstrated a System on Chip (SoC) featuring two of Imagination's latest ENSIGMA Series 3 UCCP IP platforms running real-time Wi-Fi, ISDB-T, ATSC and other key standards at Embedded Technology in Yokohama. This showed not only the broad range of standards supported by UCCP, but also the benefits of integrating multiple programmable baseband communications engines on next-generation mobile SoCs.

The ENSIGMA UCCP platform is designed to support the ever increasing number of standards for communications in a proven, highly-efficient and extraordinarily flexible programmable solution. The latest core, UCCP330, delivers multi-standard demodulation support for the 802.11a/b/g/n family of Wi-Fi standards, class-leading support for digital TV (ATSC (8VSB), Nordig Unified 2.0 DVB-T, DVB-T2, DVB-S2/S, DVB-C, 13-seg ISDB-T, ISDB-C, International ISDB-T, ISDB-S, CTTB and J.83B), mobile TV (DVB-H, T-DMB, 1-seg ISDB-T) and digital radio reception (ISDB-Tmm, ISDB-Tsb, DAB, DAB+, DMB-R and FM with RDS).



UCCP is the only multi-standard communications IP core family available in the market today that is up to the task of integrating communications onto advanced application processors – which is the course the market is expected to take.

It delivers over 20 standards today, with more to come.

Forthcoming events



Mobile World Congress 2011
Barcelona, Spain
14-17 February 2011



Embedded Systems Conference
San Diego, California, USA
2-5 May 2011



Game Developers Conference 2011
San Francisco, California, USA
28-04 February-March 2011



SIGGRAPH 2011
Vancouver, Canada
7-11 August 2011

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