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CG² AWARDED U.S. ARMY PHASE II SBIR FOR COMMAND AND CONTROL USING MOBILE GAMING TECHNOLOGY WITH QUANTUM3D COTS IDATA HMI TOOL SUITE

CG² to Develop Innovative Game-Style 2D/3D Command and Control Applications for Joint and Coalition Forces for Multiple Mobile and Embedded Platforms Using IData, IData3D and IDataMP

Ft. Lauderdale, FL – February 15, 2006 – CG², Inc., a wholly owned subsidiary of Quantum3D®, Inc., today announced at AUSA Winter Symposium the award of a Phase II contract from the U.S. Army CERDEC, Ft. Monmouth, NJ under the Small Business Innovative Research (SBIR) program to develop software and hardware components to support the insertion of high performance collaborative 2D/3D user interfaces with live video feeds into multi-echelon Command and Control (C2) applications. The graphical rendering engine used for the application is based on the Quantum3D cross-platform IData™ COTS Human Machine Interface (HMI) suite, including IData3D™ integrated realtime 3D scene manager, and IDataMP™ Digital Map components, running under OpenGL® ES. Quantum3D embedded visual computers will be used to deploy these capabilities and demonstrate them in joint and coalition C2 exercises. IData will be on display in the Quantum3D booth number 1335 at AUSA.

The goal of the research is to develop and commercialize user interface technology and APIs that leverages advances in mobile gaming to deliver a collaborative, interactive shared view of the net-centric battle space to the operational commander at multiple echelons, from the platoon and company level upward. CG² will accomplish this using common HMIs running on deployable platforms ranging from lightweight handheld systems to portable, man-wearable visual computing platforms to desktop workstations. The intended user interface will include a number of innovative concepts such as user interaction in a shared 3D space, correlation between multiple views of data, and collaborative data sharing between asymmetric networked systems. Key technologies CG² will apply to this problem include mobile 2D/3D graphics, cross-platform non-traditional user interfaces, lightweight rendering and game engines, emerging standards for cross-platform OpenGL ES based applications, data interfaces to common coalition C2 collaboration models, and systems expertise in portable 3D systems including COTS OpenGL ES ARM-based handheld systems and man-wearable systems such as the Quantum3D THERMITE® Tactical Visual Computer (TVC).



IData3D Command and Control in 3 Dimensions (C3D) prototype screen, illustrating capabilities available for OpenGL ES based mobile systems

In Phase I of the SBIR, CG² created a demonstration system called Command and Control in 3 Dimensions (C3D) as a proof of concept for full system development. The C3D system is a user interface that displays a 3D command and control picture for use by a commander. The commander can use different means to navigate through and adjust the view of the C2 picture, all in a geographically referenced 3D environment featuring high-fidelity graphics. The system allows the commander to use a pointing device and optional keyboard to interact with the terrain, units, routes, and sensor overlays to perform command and control actions such as route assignment and definition, unit and route visualization, and terrain analysis. It uses hi-resolution visual databases in standard formats, such as Multigen OpenFlight™ and

Terrex TerraPage™ and also features a worldwide terrain database capability. C3D was deployed on THERMITE and interfaced to the Army's MC2 collaborative C2 system via distributed XML.

Quantum3D IData and IData3D COTS HMI development tools are the basis of the C3D system, providing a tool-based rapid development environment that drastically reduces code and application complexity without sacrificing capability or performance. IData is the first HMI tool on the market to offer support for OpenGL ES, the widely-adopted industry standard for deeply embedded mobile visual computing platforms. With its support for OpenGL ES, IData now enables the deployment of advanced 2D/3D mixed-media graphical applications anywhere they are required, in whatever form factor is best suited for the task. IData also offers modules such as IData3D embedded scene manager and IDataMP digital map. IData's unique capabilities are critical to the realization of the SBIR goals.

"With the power and portability of IData and Quantum3D embedded visual computing platforms such as THERMITE, 3D enabled Command and Control, Mission Planning, and Situational Awareness can reach deployed users at every level", said Ross Q. Smith, Quantum3D co-founder and president. "For the first time, graphical application developers can choose a toolset and application framework that supports seamlessly deploying their HMI wherever it needs to go, from desktop workstation to in-vehicle display, man-wearable system, or PDA. We are delighted to be working with CERDEC to bring these new capabilities to the warfighter".



Quantum3D THERMITE® Tactical Visual Computer (TVC)

About OpenGL ES

Developed with broad industry backing by the Khronos industry consortium, which includes Quantum3D, OpenGL ES is a well-defined and supported subset of the OpenGL API designed to provide accelerated 2D/3D rendering functionality for mobile phones, PDAs, set-top boxes, safety-critical embedded systems, and a wide range of highly embedded environments. OpenGL ES features several profiles designed to provide capability for various platforms, ranging from fixed-point only embedded processors to high-powered safety critical embedded systems. OpenGL ES drivers are widely available for a number of embedded hardware platforms, including those from industry leading embedded chip manufacturers Intel, NVIDIA, ATI, Texas Instruments, Renesas and others. Please visit www.khronos.org for more information.

About CG²

Founded in May 1995, CG², Inc. is a wholly-owned subsidiary of Quantum3D, Inc. and is a leading supplier of affordable services, software, digital media and integrated products for government customers in the realtime visual computing market. CG²'s award winning products and capabilities include realtime multi-spectral 3D model and database development and conversion, turnkey solutions for institutional, appended and embedded training applications and development, operations and support of "hardware-in-the-loop" sensor simulation applications. For more information about CG² services and solutions see www.cg2.com or email salesinfo@cg2.com. For more information on Quantum3D and its range of realtime visual computing solutions and services, please visit www.quantum3d.com or contact salesinfo@quantum3d.com.

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