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CG², Inc.

www.cg2.com



CG² Press Contacts

Barbara Kohn
+1 (650) 342-9853
bkohn@quantum3d.com

Jill Dornan
+1 (503) 262-6505
jdornan@quantum3d.com

CG² Sales Contacts

Brie Shiflett
+1 (408) 737-8800 x 100
salesinfo@cg2.com



CG² WINS MISSILE DEFENSE AGENCY CONTRACT TO ADVANCE STATE-OF-THE-ART IN PC-BASED HARDWARE-IN-THE-LOOP SENSOR SIMULATION

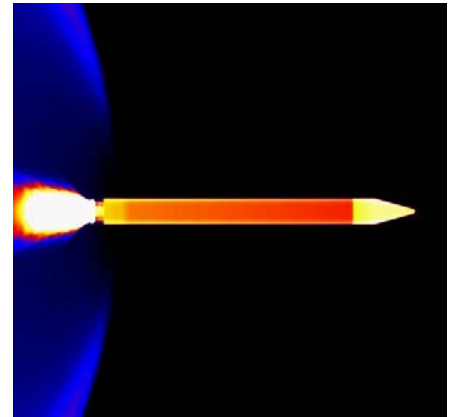
SBIR Phase II Award to Employ Quantum3D COTS Independence IG Solution for Hardware-in-the-Loop Simulation for High Fidelity Sensor Simulation and Algorithm Development

San Jose, CA – May 9th, 2005 – CG², Inc., a wholly owned subsidiary of Quantum3D[®], Inc., announced today that it has been awarded a Phase II Small Business Innovative Research (SBIR) contract through the Air Force Research Laboratory at Eglin AFB to develop advanced scene generation techniques to support algorithm development and testing for next generation missile sensors for the Missile Defense Agency (MDA). The CG² team includes Radiance Technologies, located in Huntsville Alabama, which is providing adaptation and optimization of government furnished scene generation software and algorithms for use on the contract.

The goal of this contract is to fulfill the MDA need for a high-frame-rate, high-fidelity, PC-based missile seeker simulator. During Phase I, the CG² team performed design trade studies and feasibility analyses to determine the system requirements and design approach for a next generation COTS PC-based approach to Hardware-In-The-Loop (HWIL) scene generation. Under the Phase II Contract, the CG² team will finalize the system design, implement a functional prototype system based on Quantum3D's Independence[®] Image Generator (IG) Solution and demonstrate the capabilities of the system to perform realtime scene generation using government furnished scene generation codes optimized by Radiance Technologies. The new system will provide a high fidelity HWIL environment for simulating the performance of missile defense sensors and systems under a variety of engagement scenarios.

To support the unique performance and fidelity requirements that are associated with HWIL applications, the CG² prototype system will include a COTS Quantum3D Independence IG Solution modified to enable higher sustained frame rates, enhanced full scene anti-aliasing and the use of an optimized realtime LINUX operating system. Combined with the Radiance Technologies optimized scene generation codes, the enhanced Independence IG will provide a COTS infrared scene generation system that employs multiple graphics processing units operating in parallel with Quantum3D's patented pixel level synchronization technology (U.S. Patent No. 6,646,645) and channel composition as a means to deliver high frame rate and extremely low latency performance with the high fidelity (16 bits-per-color-component with 64 sub-pixel sample full scene anti-aliasing) required by HWIL applications. In addition, because of Independence's intrinsic technology insertion capabilities, the system will enable upgrades over time to enhance performance, throughput and functionality.

"Missile defense applications represent a particularly challenging test environment, based on the mission complexity and the variety of phenomenological effects occurring simultaneously that are within the spectral bands of interest", said Ross Q. Smith, Quantum3D co-founder and president. "The Independence-based prototype system provides the performance and fidelity these complex HWIL applications require, while at the same time supporting future technology insertion as newer and more capable PC-based subsystems and



IR Image Courtesy Air Force Research Laboratory



Quantum3D[®]
Independence[™] 2500 IG
Solution

graphics technologies become commercially available. This means that the system can economically deliver increasing performance and fidelity levels while assuring application compatibility.”

“The integration of realtime, high fidelity simulations within a commercially supported, scalable parallel graphics architecture represents a significant opportunity to the defense community to achieve economies of scale and realize a much needed order of magnitude improvement in HWIL simulation fidelity”, said Tom Florence, director of tactical programs at Radiance Technologies. “We believe that our efforts with CG² on this important AFRL program provide a great start to what should prove to be a watershed improvement in HWIL simulation fidelity and value.”

“The requirements for missile seeker stimulation are rigorous, and previously have strained the capabilities of previous PC-based platforms,” said Donald R. Snyder III, Senior Scientist, KHILS AFRL/MNGG and MDA Technical Point of Contact. “We are enthusiastic that the CG² prototype system can meet our future requirements and provide a cost effective path to take advantage of performance enhancements as they become available.”

About CG²

Founded in May 1995, CG², Inc. is a wholly owned subsidiary of Quantum3D, San Jose, a leading supplier of cost-effective services for government applications. CG² specializes in conducting research and development and developing and delivering turnkey solutions for institutional, appended and embedded synthetic environment training applications and the development, operation and support of "hardware-in-the-loop" sensor simulation applications. For more information about CG² services and solutions see www.cg2.com or contact salesinfo@cg2.com. For more information about Quantum3D products and solutions, see www.quantum3d.com or contacts salesinfo@quantum3d.com. For more information on Radiance Technology, please see www.radiancetech.com or contact Tom Florence at tflorence@radiancetech.com.

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