

ATI FIREGL GRAPHICS PUTS THE RENDER IN AUTOMOTIVE IMAGE RENDERING (AIR) PHOTOREALISTIC IMAGES

Today, advertising agencies can create spectacular real world renderings of a new automobile without having to wait for the actual production vehicle or logistical complications of a photo shoot. Instead, digitally created real world images can be used to create marketing materials and advertisements before the vehicle is ready for final production, allowing manufacturers to build anticipation and demand for their new products. Automotive Image Rendering (AIR) based in the United Kingdom recently embarked on such a project, to produce high quality photorealistic vehicle renderings for automotive customers before the physical vehicle was available.

A fantastic digitally created image requires great imagination, attention to detail, and high quality rendering. When creating computer generated images of real world objects, execution is everything. One blemish in rendering, colors are not natural, or mistakes in perspective will result in an unrealistic visual. Often times it takes many attempts to get the final real world image just right, so rendering time is critical if a project is going to meet tight deadlines. ATI FireGL workstation graphics accelerators deliver the graphics horsepower and visual fidelity required by real world rendering customers.

**"WE NEED THE BEST POSSIBLE
TECHNOLOGY AVAILABLE AND THAT'S
WHY WE TURNED TO THE NEW ATI FIREGL
V7350 WITH 1GB MEMORY WHICH
TURNED OUT TO BE 20% TO 30% FASTER
THAN OUR CURRENT GRAPHICS SOLUTIONS"**

- KEITH JEFFERY
SALES MANAGER
AUTOMOTIVE IMAGE RENDERING (AIR)



The automotive industry is one market that demands high performance rendering and precision because competition is greater than ever. Gone are the days of ten-year model lifecycles. Now, it's about crossover models, short run productions, and even shorter lead times to market. And with a reduced amount of time to market, one process crucial to the success of a new vehicle is the marketing efforts required to promote a new car design to potential customers.

Keith Jeffery, sales manager at AIR explains, "Real world rendering is a tremendous computationally intensive activity. We had to do a great deal of rendering in order to achieve the finished image we expected. Depending on the required output resolution, these renderings took days to complete and even though we used the latest dedicated hardware and software rendering solutions. We wanted the best possible technology available to reduce rendering time and that's why we turned to the new ATI FireGL V7350 with 1GB of memory. The product turned out to be 20% to 30% faster than our current graphics solutions."

AIR took the CAD model of a vehicle supplied by a manufacturer prior to its production to generate the first stage of the automotive rendering. Then AIR integrated the computer generated car into a high-resolution photographic image of a real world location along with a High Dynamic Range (HDR) capture of the environment. This created a composite image with accurate lighting and reflections for the specific location. The entire scene was then rendered to produce stunning computer generated images of vehicles that are virtually indistinguishable from an actual photograph of the car on location. Using this technique, rendered images can take the place of photography used in advertisements.

Andrew Jackson, lead technician at AIR who worked on the same project, recalls, "Making changes to a scene to get the perspective correct on the position of the car in comparison to the background plate or the angle of the camera entailed moving large amounts of data around the screen. That's another reason why we used to the new ultra high-end ATI FireGL V7350. We were able to load larger models than ever before and we were able to manipulate them significantly more smoothly." Jackson added, "Of

course, we had to have 10-bit color which made the ATI FireGL with Avivo Technology a requirement. 10-bit color provides the best possible quality and is closest to the visual range of the human eye and when connected to the EIZO® ColourEdge® professional monitor, we achieved the precise visual fidelity we wanted. We looked at competitive products, but they cost much more and didn't provide us the superior image fidelity of 10-bit color."

Jackson continued, "We used a combination of Autodesk® Maya®, Autodesk 3ds Max® and Mental Images® Mental Ray® software for scene creation and rendering. Since Mental Ray is a 64-bit application certified and optimized for dual core AMD Opteron™ processors, we used a rendering facility with over 200 dual-core AMD Opteron processor based workstations for scene preparation and data creation. The AMD Opteron processor with Direct

Connect Architecture greatly increased our productivity by reducing rendering time. The bigger the file, the larger the gain in rendering speed and the platform's reliability ensures we won't endure down time."

As a result of combining Automotive Image Rendering's innovative techniques and creativity, with the hardware power from ATI and AMD, AIR was able to deliver real world rendering to its clients to solve real world problems in a fraction of the time and actual cost.

"OF COURSE, WE HAD TO HAVE 10-BIT COLOR WHICH MADE THE ATI FIREGL WITH AVIVO TECHNOLOGY A REQUIREMENT. WE LOOKED AT COMPETITIVE PRODUCTS, BUT THEY COST MUCH MORE AND DIDN'T PROVIDE US THE SUPERIOR IMAGE FIDELITY OF 10-BIT COLOR."

ANDREW JACKSON,
AUTOMOTIVE IMAGE RENDERING (AIR)

ATI™ FIREGL™
WORKSTATION GRAPHICS ACCELERATORS

