



NVIDIA Maximus Success Story

NVIDIA Maximus Helps Fisker Automotive Drive at Full Speed

Fisker Automotive describes its premium hybrid electric vehicles as “responsible luxury without compromise.” Looking at the 2012 Fisker Karma, the company’s first offering, it’s easy to believe the founders’ claim that they built their company around the design process. As a new automobile company pioneering a new category – luxury hybrids – Fisker pays relentless attention to every detail in the creation of its cars. And as a company whose first product is currently being launched, it utilizes compelling imagery to communicate its vision and entice future customers.

Creating that imagery involves numerous steps and software tools, including Dassault Systèmes CATIA and Autodesk Alias for 3D modeling, various Bunkspeed products (incl. Shot, Move, Udrive, Hypershot, and Pro) for photorealistic rendering, and Adobe Photoshop and After Effects to perfect the quality of animations and images produced by Bunkspeed. Fisker has recently adopted the new [NVIDIA® Maximus™](#) platform, which allows a single workstation to do both visualization and compute-intensive tasks simultaneously, so that the rendering process no longer monopolizes designers’ workflows.



“The Maximus system lets me get more done in the same amount of time,” said Mark Rumsey, senior surfacing designer for Fisker Automotive. “I can still use my computer while it’s doing ray tracing, which is absolutely revolutionary for me.”

CHALLENGE

As part of Fisker’s design styling organization, Rumsey creates still images and animations used in marketing imagery for the company’s website and print, as well as for use in high-level executive meetings. He joined Fisker in 2010 after 20 years of involvement with computer-aided drafting and 3D computer surfacing, for both industrial and entertainment applications.

“Fisker is a company with big ideas, big goals, and big aspirations,” said Rumsey. “Fisker wants to reduce the time needed to bring new cars to market, which means greater reliance on digital means, including real-time ray tracing, visualization, animation, and rendering. That mindset filters throughout the organization, and it means all of us are looking for ways to squeeze time out of our processes.”

Cars represent big digital models—5.5 million to 6.5 million polygons, typically. Before the NVIDIA Maximus solution was available, Rumsey encountered various challenges in his workflow while creating photorealistic-quality digital stills and animations of the new Fisker Karma.



Rumsey’s typical workflow was to prepare a model in Alias and input the data into Bunkspeed. After applying different materials, setting up the lighting and defining the right camera angle he would then launch a rendering. “Each still frame takes anywhere from a minute to 20 minutes to render, and animations take several hours, usually overnight. Rendering used all the GPUs on my computer, so I was shut down from doing anything else while rendering was happening,” said Rumsey.

SOLUTION

The NVIDIA Maximus platform combines the industry-leading, professional 3D graphics capability of an [NVIDIA Quadro®](#) professional graphics processing unit (GPU) with an [NVIDIA Tesla™ C2075](#) companion GPU that’s able to perform compute-intensive tasks on its own. As a result, a single Maximus-powered workstation can do ray tracing or complex number-crunching while leaving compute cycles available for other tasks simultaneously, such as 3D design, simulation, or preparing a presentation.

“I can allocate the companion GPU to rendering, leaving the other GPU and the CPUs available to do other work,” said Rumsey. “I can work on several different turntables, like 360-degree spinned views of a car with different colors, send the images off to render, then on that same workstation I can keep using Bunkspeed to apply different textures to the car or to work on different variants of a car, or I can model in Alias, send emails, or research things on the Internet.”

IMPACT

“Because the NVIDIA Maximus platform enables me to still use my computer while I’m rendering, it means I can get more iterations of a design done in the same amount of time,” said Rumsey. “It’s a huge leap in productivity.”

It also enhances the creative process. “I have time to try out more options and see the results quickly in photorealistic quality,” he said. “Before Maximus, if something came to mind while the machine was rendering, I couldn’t act on the idea right away, so sometimes ideas got lost. With the Maximus system, now I can explore different ‘what if’ scenarios. If I have an idea for a different camera path or lighting or refining some detail on the model itself, I can create multiple options to present to the marketing department, so the final product is just that much better.”

Collaboration among Fisker team members is improved, as well. For instance, Rumsey can sit down with a color expert on the team and they can work together to select the right colors for a particular feature of the car. With the parallel-processing capabilities of the Maximus system, they can make a color change, do a real-time ray tracing to check how it will really look, and go back and forth until they agree on the exact shade and hue.

“It’s so much faster now to iterate colors and materials sitting next to other designers,” said Rumsey. “We get fast interactivity with Bunkspeed *and* fast ray tracing, all at the same time.”



Whether it’s preparing photorealistic images for billboards to be used by Fisker dealerships around the country, tweaking the lighting for a single website image, or creating a promotional video or animated fly-over, NVIDIA Maximus technology is helping Fisker’s design styling organization produce better results in less time, and without the frustration of waiting for the computer to finish rendering.

“Creativity, productivity and time management – those are the big advantages I’ve found with the NVIDIA Maximus platform,” said Rumsey.

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About Fisker Automotive, Inc.

Fisker Automotive is an American car company, founded in 2007, committed to producing electric vehicles with extended range (EVer) that deliver uncompromised responsible luxury. The company is designing and developing the world's first line of premium electric plug-in hybrids representing the company's firm belief that environmentally conscious cars need not sacrifice passion, style, or performance. Fisker Automotive is a global company that is redefining luxury for the modern sports car buyer. For more information on the brand and the Fisker Karma Sedan, please go to <http://fiskerautomotive.com>.