Autodesk Simulation Helps Company Create Ultimate "Go Anywhere" Craft

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ARKTOS Developments Ltd. Relies on Autodesk Software to Evaluate How Amphibious Craft Will Perform in Extreme Environments

SAN RAFAEL, Calif., Jan 24, 2012 (BUSINESS WIRE) --ARKTOS Developments Ltd. (ADL) --the designer and manufacturer of a remarkable amphibious vehicle known as the ARKTOS Craft--is using simulation software from Autodesk, Inc. (NASDAQ: ADSK) to prepare its products to operate in some of the world's most environmentally demanding locations.

"Using Autodesk Simulation software helped ARKTOS to accurately predict product performance on a nearly limitless vehicle," said Robert "Buzz" Kross, senior vice president, Manufacturing Industry Group at Autodesk. "The extreme environments our customers are successfully analyzing are a testament to how accurately Autodesk Simulation technology can simulate real world performance."

Originally designed as an amphibious evacuation craft for Arctic offshore oil facilities, the ARKTOS Craft can move from frigid -50°C (-122°F) temperatures, through burning flames, and back again, as in the case of evacuating a burning oil rig. Additionally, the ARKTOS Craft can easily navigate ice-rubble fields, ice ridges and open water--and can even climb up or down vertical steps--making the ARKTOS Craft a highly capable exploration craft for a variety of extreme climates.

Valmont West Coast Engineering (Valmont), which provides finite element analysis (FEA) services to ADL, was responsible for predicting vehicle performance in these severe environments: "We used Autodesk Simulation technology to predict critical stresses for the ARKTOS at extreme temperatures and loading conditions," said Ioan Giosan, Ph.D., P.Eng at Valmont. "After finding an optimal design using FEA methods, we relied on physical testing and field use to validate the accuracy of our results."

Digitally Optimizing Performance

The key to the ARKTOS Craft's mobility is an articulated arm between the vessel's two main compartments. As the Craft climbs up onto an ice shelf from the water, the hydraulics in that arm help push the front unit of the Craft up out of the water so that the special track spikes can grab the ice.

Using the multiphysics capabilities of Autodesk Simulation, Valmont was able to show ADL engineers how thermal stress caused by temperature extremes would combine with mechanical stress within the articulated arm between the units. Additionally, since the arm would see repeated compressive and tensile loading, Valmont also analyzed fatigue life using the Autodesk Simulation multiphysics tools.

"We continue to modify the original ARKTOS Craft design for each of our new customer's unique needs," said Bruce Seligman, president at ADL. "Autodesk software makes it easy for us to design new attachments for the craft, and then simulate how those modifications will affect performance. Sharing early concepts and engineering analysis results with stakeholders digitally is a critical part of our development workflow today and is all powered by Autodesk software."

ARKTOS Craft units are currently operating in Alaska, China, and the Caspian Sea in Kazakhstan.

About ARKTOS Developments Ltd.

Headquartered in British Columbia, Canada, ARKTOS Developments Ltd. is the manufacturing body for the high mobility amphibious Craft known by the registered trademark of ARKTOS. For additional information, visit www.arktoscraft.com.

About Valmont West Coast Engineering

Valmont West Coast Engineering provides Finite Element Analysis (FEA) and other engineering services. In business since 1977, Valmont West Coast Engineering designs, engineers, and manufacturers applications for energy transmission, support structures, telecommunication towers, lighting and a variety of specialty projects. For additional information, visit www.valmont.com.

About Autodesk

Autodesk, Inc., is a leader in 3D design, engineering and entertainment software. Customers across the manufacturing, architecture, building, construction, and media and entertainment industries -- including the last 16 Academy Award winners for Best Visual Effects -- use Autodesk software to design, visualize and simulate their ideas. Since its introduction of AutoCAD software in 1982, Autodesk continues to develop the broadest portfolio of state-of-the-art software for global markets. For additional information about Autodesk, visit www.autodesk.com.

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