

T-Splines for Rhino P44

SpaceClaim 2010 P50

CopyCAD Pro 2010 P53

# DEVELOP 3D

TECHNOLOGY FOR THE PRODUCT LIFECYCLE )

| SEPTEMBER 2010 | €6 | €7 | \$10 | DEVELOP3D.COM

## COME FLY WITH ME

**BA transforms  
the world of  
First Class travel**

**P56  
WORKSTATIONS  
TESTED WITH  
DEVELOP3D'S  
BRAND NEW  
BENCHMARKS**

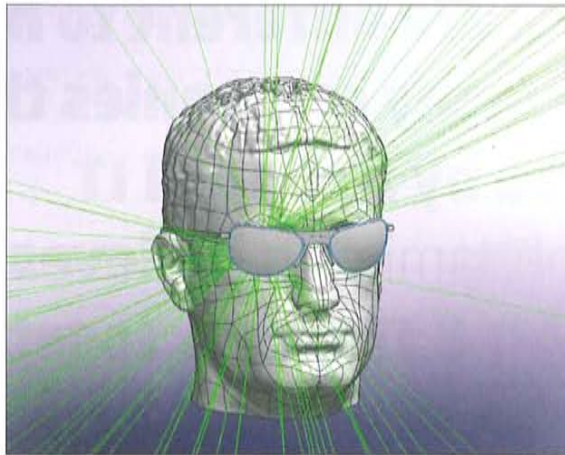
**CAD IN THE CLOUD AMPHIBIOUS PLANES REVERSE ENGINEERING**

## US Air Force simulates laser eye protection

**T**he United States Air Force Research Lab (AFRL) is using the light and colour simulation software, OptisWorks, to simulate the performance of various manufacturers' proposed designs for anti-laser eyewear. The software enables AFRL to approve or reject a manufacturer's design for use by military aircrew.

In order to maximise their survival and effectiveness during combat, air crews need an effective means of protecting their eyes from the risk of injury from lasers. Traditional laser eye protection (LEP) gives some degree of physical protection by filtering out the undesirable wavelengths of light while still transmitting visible light. However, the disadvantage of these traditional designs is that the colour filters, used to block laser light, can interfere with the air crew's reading of cockpit instrumentation by altering their whole light environment.

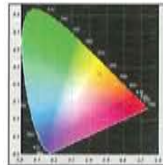
AFRL, with support from optical specialists from TASC, is employing Optis solutions for testing two aspects of LEP. Firstly, to analyse geometric coverage of the LEP, OptisWorks' reverse ray tracing techniques are used, whereby the eye is considered as a source and each ray emitted around the eyewear is deemed to be a possible entry path for a laser. While this is not a physical reality, it is considered an effective means to determine the coverage area.



The second challenge faced by AFRL was simulating and analysing how colours appear when seen through the LEP. Using the software's advanced colourimetric simulation capabilities and its ability to take into account human vision and a sunglass filter kit, where the special LEP filters are defined, engineers can ascertain the degree of colour change that occurs when a specific element of cockpit instrumentation is viewed through LEP. This enables them to determine whether a pilot will be able to correctly interpret avionic information from displays, warnings, and illuminated controls on the cockpit interface.

"By using OptisWorks software we have cut out months of costly, time-consuming human testing and simultaneously improved the reliability of our findings. When we compared simulation results and real measured results the difference was almost zero," commented Bill Brockmeier, Optical Engineer, Advisory Services (TASC), Brooks Air Force Base, Texas.

[www.optis-world.com](http://www.optis-world.com)



(Top) Forget your classic pair of aviators, anti laser eyewear is where it's at this summer

(Above) Simulation and measurement of colour change that occurs when instrumentation is viewed through LEP

## ROUND UP

➔ CNC simulation software developer, CGTech, will feature the 2010 Vericut Virtual Machining Gallery at Aero Engineering 2010 at the NEC on September 29-30. The gallery will feature all types of CNC machine tools and examples of integration with leading CAM systems [www.cgttech.com](http://www.cgttech.com)

➔ Epsilon Structural Analysis, has become a reseller for Altair's HyperWorks simulation suite. The software features modelling, analysis, visualisation and data management solutions for linear, non-linear, structural optimisation, fluid-structure interaction, and multi-body dynamics [www.epsilon-sa.com](http://www.epsilon-sa.com)

➔ FIAT Group Automobiles is to implement Icona Solutions' aesthetica product to help improve the perceived quality of its vehicles. The software will be used as early as the concept stage to enable issues of fit and finish quality to be identified and resolved when the cost of design changes is lower [www.iconasolutions.com](http://www.iconasolutions.com)

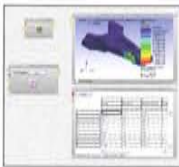
➔ Ansoft Designer 6.0 from simulation specialist Ansys includes new Solver-on-Demand technology and enables electronic design engineers to analyse signal-integrity, power-integrity and electromagnetic interference (EMI) problems from a single schematic- and layout-based environment [www.ansys.com](http://www.ansys.com)

➔ Workstation Specialists has launched its latest RS2600 rendering system, a rack mounted solution that packs two independent render nodes into a single 1U product. Powered by Intel Xeon 5600 series six-core processors the scalable system can be configured from two to 200 nodes [workstationspecialists.com](http://workstationspecialists.com)

## Simulation specialists target fatigue analysis

**A**nsys simulation software now incorporates the advanced fatigue capabilities of nCode DesignLife, a durability software from HBM. The technology is designed to help product development groups avoid in-field failures and reduce raw material costs that can result from product overdesign.

Multidiscipline simulation specialist, MSC.Software, has also announced its



Fatigue analysis of a combustion engine connecting rod using Ansys nCode DesignLife

reinstated partnership with HBM nCode, which will result in an enhanced version of MSC Fatigue, an FE-based durability and damage tolerance solver.

Meanwhile, MSC.Software has partnered with Computational Fluid Dynamics (CFD) software developer, ACUSIM, to couple their respective MD Nastran and AcuSolve applications for fluid-structure interaction (FSI) simulations.

[ansys.com](http://ansys.com) / [mscsoftware.com](http://mscsoftware.com)

## Six-legged dog brought to life by Materialise

**M**aterialise was commissioned by Italian architect, Antonio Pio Saracino, to build his new Eni trophy design for the Moto GP in Sachsenring, Germany and Formula 1 race in Budapest, Hungary.

The trophy was created using selective laser sintering technology and helped

Saracino realise his vision of a six-legged dog with a flame that comes out of its mouth, an idea that would have been 'impossible to realise' with traditional manufacturing techniques.

[www.materialise.com](http://www.materialise.com)  
[www.enizyme.com](http://www.enizyme.com)

