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## Jaguar Land Rover accelerates design and development process with OPTIS' physics-based rendering software for visualisation



Daytime

Daytime with alternative trim



False colour

Night time

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### Physics-based simulations for reliable decision-making, using OPTIS software

**Toulon, France –Tuesday, May 10, 2011** OPTIS, the leading software developer for the scientific simulation of light and human vision, today announced that Jaguar Land Rover is using its SPEOS software tool to accelerate the design and development process at its car manufacturing sites in the UK.

Typically it can take four years to develop a new car from concept to prototype but by the use of visualization techniques enabled by OPTIS's software, Jaguar Land Rover is able to reduce both the time and investment required to build a full prototype car.

SPEOS software enables engineers to verify that a particular design works well at all levels by the exact analysis and measurement of both the ergonomic criteria and perceived quality of material surfaces from the occupant's perspective and under unlimited ambient lighting conditions. This solution helps designers to optimize and improve the layout of the car interior, all illuminated graphics as well as the car's headlights by precisely developing



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multiple, virtual prototypes and verifying the design integration. The OPTIS software also helps with the development of more rigorous specifications of materials that can be used in particular cars. It can even help to define new products.

Jaguar Land Rover also uses traditional rendering solutions, often useful for initial marketing pictures before the development has started. The difference between these traditional solutions and SPEOS is SPEOS' ability to accurately measure the physical – and thus optical – properties of the materials and lighting sources, as well as the occupant's visual perception. This physics based approach ensures that the virtual prototype will accurately predict the reality of the final product and in any lighting conditions, from any perspective. There will be no last-minute surprises when the car goes into production.

OPTIS's physics-based rendering SPEOS software is fully integrated in the CATIA V5 PLM solution. This is a key advantage as it processes the CAD-data generated in the design process and optically models the performance. It simulates the performance of the vehicle from the relative position of the occupant and helps engineers to visualise how the interior reacts with light in different conditions. It helps accurately model light sources and surfaces from the perspective of each occupant.

SPEOS enables Jaguar Land Rover to look at the propagation of light throughout the vehicle and the internal and external effects of different components they may use, as well as the effect of a sunny or night-time environment. The optical precision of SPEOS helps them with standards verification, component compliance and gives them the ability to easily review a number of iterations. This reduces the cost of expensive prototype parts and provides senior management an optically accurate view of the finished design.

OPTIS says that SPEOS is the only truly physics-based rendering tool with the power to model the physical properties of light and maps the path and interaction of light with different surfaces, and uniquely, how these interactions will be perceived by the occupants. The software is used throughout the design process to study the vision and visibility for different driver positions depending on size and seating configuration, helping to avoid potentially dangerous reflections for the driver.



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Jaguar Land Rover are currently looking to implement the SPEOS software in their Virtual Reality center, to allow designers, engineers and ergonomists to interact with their designs in a fully immersive 3D environment.

“We are delighted to welcome Jaguar Land Rover as a major customer,” said Pete Moorhouse, VP Sales & Marketing at OPTIS. “We have worked closely with the Jaguar Land Rover team to efficiently implement our solutions and guarantee that full advantage can be taken as quickly as possible. I look forward to supporting Jaguar Land Rover throughout their virtual prototyping activities”.

Jacques Delacour, President & CEO, OPTIS, added, “I am really proud to include Jaguar Land Rover as an Optis customer. Jaguar Land Rover is at the forefront of automotive manufacture and is using the SPEOS software in a number of innovative and exciting ways that help its design process and visualisation.”



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## **About Jaguar Land Rover**

Jaguar Land Rover is a business built around two great British car brands that design, engineer and manufacture in the UK. Jaguar Cars, founded in 1922, is one of the world's premier manufacturers of luxury saloons and sports cars.

Land Rover has been manufacturing authentic 4x4s, since 1948, which the company says define the "breadth of capability" in their respective market segments.

The Jaguar XF, XJ and XK models are manufactured at the company's Castle Bromwich plant in Birmingham. The Land Rover Freelander 2 is manufactured at the Halewood plant in Liverpool. Land Rover's Defender, Discovery 4, Range Rover Sport and Range Rover models are all built at Solihull (all UK).

The Jaguar Land Rover business employs over 16,000 people, predominantly in the UK, including some 3,500 engineers at two product development centres in Whitley in Coventry, and Gaydon in Warwickshire. The business is a major wealth generator for the UK with 78 per cent of Land Rovers exported to 169 countries and 70 per cent of Jaguars exported to 63 countries. Sales to customers are conducted principally through franchised dealers and importers

## **About OPTIS**

OPTIS is the world leading software editor for the scientific simulation of light and human vision within a Virtual Reality Environment. Its solutions allow designers, ergonomists and engineers to simulate and optimize lighting performance, product appearance as well as the visibility and legibility of information on Human Machine Interfaces, in a fully-immersive environment.

Since integrating its SPEOS solution in SolidWorks in 2001, CATIA V5 in 2002 and Pro/ENGINEER in 2008, OPTIS is still the only company to provide a light simulation solution fully based on a physical model inside a CAD/CAM software.

OPTIS has delivered more than 6000 licences to 1600 customers in 36 countries worldwide. Users include most of the major automotive, aerospace, electronics, white goods and lighting manufacturers, as well as architects, universities, research laboratories and defence agencies. They use the SPEOS technology to design, simulate and visualise in a Virtual Reality environment, products as diverse as automotive lighting, mobile phone screens and keypads, dashboard and cockpit displays, LCDs, LEDs, luminaires, military detection systems and optics for industrial vision, defence and medical applications.

More information can be found at <http://www.optis-world.com>

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