Latest Releases of the LucidShape Product Family Support Faster, More Efficient Automotive Lighting Simulations

MOUNTAIN VIEW, Calif., Sept. 26, 2018 /PRNewswire/ -- Synopsys, Inc. (Nasdaq: SNPS) today announced the availability of the latest releases of the LucidShape® CAA V5 Based and LucidDrive® software products for automotive lighting analysis and simulation, which offer new features to support faster design cycles, lower development costs, and enhanced realism of headlight simulations.

LucidShape CAA V5 Based Version 2018.09

LucidShape CAA V5 Based offers the most comprehensive CATIA-based optical simulations of automotive lighting products. The product's fast, accurate modeling and analysis of part-level models and product-level assemblies have been enhanced in this release with the following major new features:

- **Surface sensor for high-accuracy analysis of illuminance and irradiance on curved surfaces.** In many automotive lighting applications, illuminance and irradiance must be evaluated on curved surfaces for an accurate, efficient analysis of the optical model. This analysis is useful for evaluating performance for interior ambient illumination and uniformity of light extraction near light guide surfaces, and for analyzing hot spots on mirrors, lenses, and other highly complex or curved lamp components in exterior lighting systems. The new surface sensor allows designers to analyze the illuminance and irradiance distributions as a false color map directly in the LucidShape CAA part design view, adjust the scale and color mapping, interactively measure the value at a specific location of the surface sensor, and export the simulation data to an ASCII file for additional analysis if required.
- **New tools for light guide design and optimization.** The latest Light Guide Design Module helps designers model and optimize automotive light guides and their extraction features faster and more flexibly. Designers can create, optimize, and switch between multiple light guides in a part. The Bézier Curve Preview feature provides the ability to visualize Bézier curves prior to applying them to light guide extractors. Optimization system types have been introduced to allow you to set up and more easily optimize eight standard system configurations, including systems that have sources on both ends of the light guide that can be non-symmetric or symmetric. Additional usability improvements include the ability to save and return to optimization states and create design tables.
- **Faster simulations with extended GPUTrace support.** LucidShape, with its GPUTrace™ capability, is the first optical simulation software to take advantage of graphics processing units to deliver simulation speed increases by orders of magnitude compared to multithreading capabilities. GPUTrace support has been added to the LucidShape CAA ray history sensor feature to dramatically speed analysis of signal lighting functions and reduce the number of design iterations needed to achieve lit appearance requirements and regulatory compliance. GPUTrace support has also been added to the fixed random seed option for simulations, which allows designers to obtain precisely reproducible results when re-running simulations.

LucidDrive Version 2018.09

LucidDrive allows designers to simulate the performance of automotive headlamps when driving at night. Major enhancements in LucidDrive version 2018.09 include:

- **Resolution improvement for pixel light simulations.** LucidDrive supports high-resolution light distributions with the ability to specify a resampling threshold below 0.15° for improved visualization of headlamp pixel light systems.
- **Vehicle detection performance enhancement.** The LucidDrive vehicle detection feature has been enhanced to allow a higher frames-per-second rating with a larger number of vehicles in the driving simulation. This improves driving simulations for matrix beam and pixel light systems, as well as other dynamic headlights and adaptive front-lighting systems (AFS).
- **Motorcycle AFS tilt-switch plugin.** An AFS tilt-switch plugin script for motorcycle simulations is now available. The script enables driving simulations to switch headlight functions on and off by the roll angle of the motorcycle.

Learn more about the updates in Synopsys' LucidShape CAA V5 Based and LucidDrive products at the SIA (French Society of Automotive Engineers) VISION conference in Paris, France, October 9-10, 2018, at the Synopsys booth.

About Synopsys LucidShape Products

Synopsys' LucidShape products provide a complete set of design, simulation and analysis tools for automotive lighting. With dedicated algorithms tailored for automotive applications, LucidShape software facilitates the design of automotive forward, rear, and signal lighting reflectors and lenses. The LucidShape CAA V5 Based product is an interactive tool that allows designers to perform optical simulations and analyses of automotive lighting products within the CATIA V5 environment, as well

as build, analyze, and optimize light guides. The LucidDrive tool provides the ability to perform virtual night-driving simulations that generate realistic lighting scenes in real time, which allows designers to quickly and accurately evaluate beam patterns for exterior automotive lighting applications on the road, traffic signs and surroundings prior to expensive fabrication and testing. For more information, visit https://www.synopsys.com/optical-solutions/lucidshape.html.

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