Latest Release of Synopsys' CODE V Optimizes Optical Design Performance for Cost-Effective Manufacturing

CODE V 10.7 Now Generally Available

MOUNTAIN VIEW, Calif., Nov. 10, 2014 /PRNewswire/ --

Highlights:

- Enhanced design visualization supports cutting-edge optical systems, including those with hyper-hemispherical fields of view
- Robust ray tracing algorithm accelerates optimization and analysis of precision optical systems
- New optimization parameters improve optical system manufacturability
- Charting improvements enhance presentation of system performance

Synopsys, Inc. (Nasdaq: SNPS), a global leader providing software, IP and services used to accelerate innovation in chips and electronic systems, today announced the release of its CODE V® version 10.7 optical design software, the company's industry-leading software application for the design of high-performance optical systems. The CODE V 10.7 release delivers expanded optimization, design visualization and analysis capabilities that further strengthen the software's support for the creation of manufacturable, cost-effective imaging optics. These capabilities can help engineers develop and build superior optical systems and deliver them to market faster.

"The functionality in CODE V 10.7 has been developed to meet optical design and fabrication needs in new and innovative ways," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "We've delivered faster calculations, enhanced analysis features and improved system visualization tools to support all aspects of the optical design process. For example, CODE V's new optimization constraints can deliver time-to-market and cost-to-manufacture savings by producing efficient optical designs that meet performance and packaging requirements."

Image Simulation Support for Hyper-Hemispherical Fields

The Image Simulation (IMS) feature, which helps designers visualize and communicate optical performance results, now supports several additional mapping functions, including those that allow analysis of systems with hyper-hemispherical fields of view. This is particularly useful for assessing the performance of automotive navigation cameras, surveillance cameras and DSLRs.

"CODE V 10.7 Image Simulation enhancements provide a convenient method for evaluating optical systems that are used in unconventional imaging environments, such as automotive surround, 3D (stereo) imaging or hyper-hemispheric imaging," said John Tamkin, chief executive officer and chief technology officer of Imaging Insights LLC. "We have used these tools to develop hyper-hemispheric designs and have found them to be effective in evaluating synthetic target imagery. Rather than relying on MTF and PSF plots, the diffraction-based Image Simulation helps bridge the gap between perception and engineering metrics for our clients."

Improved Ray Tracing Robustness for Real Image Heights

CODE V ray tracing uses an enhanced algorithm developed by Synopsys to further improve the software's industry-leading optimization and analysis capabilities. Specifically, the ray tracing algorithm for the Real Image Height field type has been improved to make it more robust, as well as to speed up ray tracing. This can be useful for applications such as zoom lenses and on-the-chip image processing, where designers want to optimize for specific points on a detector.

Optimization Enhancements for Manufacturable Designs

In the Automatic Design feature, three new constraint types support the optimization of manufacturable systems:

- Aspect Ratio of Center Thickness to Diameter
- Aspect Ratio of Edge Thickness to Diameter
- General Tolerance Sensitivity

The new aspect ratio constraints are particularly useful for global optimization of complex optical systems, where the form of the lens can change significantly and can be used to reduce weight and cost in any system. The General Tolerance Sensitivity constraint is a computationally efficient method for reducing system sensitivity to tolerances and is particularly beneficial for complex lenses, such as varifocal zoom lenses or any

system with many elements.

Improved Charting

The following charting enhancements are now available:

- Charts for user tolerancing (Monte Carlo and Finite Differences) and CODE V's fast wavefront differential tolerancing have a new look that enhances the designer's ability to visualize and present system performance results
- A new Pegel diagram (showing the surface-by-surface aberration distribution) for third- and fifth-order aberrations allows designers to quickly determine the aberration balance in their systems and troubleshoot problem areas
- Quick access buttons for font and line width control improve chart appearance for presentations and reports

Availability and Resources

CODE V version 10.7 is available now. Customers with a current maintenance agreement can download this version from the Synopsys website using their SolvNet® account.

About CODE V

CODE V is an optical engineering and design software solution that supports the optimization, analysis and tolerancing of image-forming optical systems and free-space photonic devices. For more information, visit http://optics.synopsys.com/codev.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) accelerates innovation in the global electronics market. As a leader in electronic design automation (EDA) and semiconductor IP, Synopsys delivers software, IP and services to help engineers address their design, verification, system and manufacturing challenges. Since 1986, engineers around the world have been using Synopsys technology to design and create billions of chips and systems. Learn more at www.synopsys.com.

Editorial Contacts:
Tess Cahayag
Synopsys, Inc.
650-584-5446
maritess@synopsys.com

Lisa Gillette-Martin
MCA, Inc.
650-968-8900, ext.115
lgmartin@mcapr.com

SOURCE Synopsys, Inc.