CODE V 11.5 Brings New Hidden Lens Module, New Optimization Options, and Faster Freeform Optics Design

We are pleased to announce the availability of CODE V (https://www.synopsys.com/optical-solutions/codev.html) version 11.5, Synopsys’ industry-standard optical design software, with smart tools to design better solutions faster. This release introduces the CODE V Hidden Lens Module, which makes it easy to collaborate with customers, subcontractors, and suppliers while protecting the valuable intellectual property (IP) behind the lens design. The release also expands CODE V’s built-in intelligence with new lens optimization capabilities, enhanced AI-optimized glass selection, and fast evaluations of freeform surface performance.

“The new Hidden Lens Module in CODE V allows seamless collaboration between optical designers and fabricators to support the entire design-to-manufacturing process while protecting IP,” said Stuart David, vice president of engineering in Synopsys’ Optical Solutions Group. “We’ve added sophisticated features to enable CODE V users to optimize their systems faster and more flexibly. We’ve also made it easier for designers to evaluate performance of freeform optics often used in AR/VR, automotive, and aerospace applications.”

Protect Your IP with CODE V’s New Hidden Lens Module
CODE V's new Hidden Lens Module (HLM) allows you to create an optical component that represents all or part of the CODE V optical surface prescription without exposing design details. This feature provides accuracy and flexibility for secure design collaboration:

- You can encrypt all or a portion of a lens system to share with other CODE V users to enable performance analysis of the design without disclosing proprietary details.
- You can create the encrypted .HLM file used by the HLM surface directly, without modifying the current lens, or you can convert the current lens to its HLM equivalent.
- The thickness of the HLM can be arbitrary, and the rear surface of the HLM can be optionally tilted/decentered to define an accurate envelope geometry for a tilted or decentered system.

CODE V Hidden Lens Module Example

Achieve Superior Optimization Results with Enhanced Capabilities and Workflows

CODE V now includes an alternative optimization method for computing second derivative information for damped least squares options. Based on the Broyden-Fletcher-Goldfarb-Shanno algorithm, this method can lead to better results for problems where the second derivative matrix is ill-conditioned, such as when your system optimization setup requires a similar number of constraints and variables.

This release also introduces optimization workflow improvements, including easier access to optimization data. This enables users to create powerful user-defined constraints and new error functions supporting complex, iterative optimization with the ability to calculate dynamic re-weighting of constraints.

Design Freeform Optics Faster

CODE V includes sophisticated freeform surfaces to achieve superior correction in systems with significant tilts and decenters. These surfaces are particularly useful for users designing AR/VR systems and other systems that require compact, lightweight optics. This release enhances CODE V's unique 2D coefficient
table, with new controls that facilitate fast, easy assessments of freeform surface symmetry characteristics.

**Save Time with Speed Improvements to AI-Optimized Glass Selection**

CODE V’s Glass Expert feature for engineering-savvy glass substitution has been improved to execute faster, and to validate the starting system against weight, cost, transmission, and thermal input specifications.

**Availability**

CODE V v11.5 is available now. Customers with a current maintenance agreement can download this version from the Synopsys website using their SolvNetPlus (https://solvnetplus.synopsys.com/) account or obtain the software from their local distributor (https://www.synopsys.com/optical-solutions/support/support-global-contacts.html).

**To Learn More**

- Contact our Sales Team (https://www.synopsys.com/optical-solutions/osg-contact-us.html) to request a demo and trial license.

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