SYNOPSYS®

APPLICATION CASE STUDY

LucidShape Application: Designing Complex Sensor Surfaces

Overview

An automotive illumination engineer needed to analyze illumination on a multitude of surfaces within a new headlamp compartment under development. The headlamp contained complex geometry with a large number of surfaces. It was important for the engineer to analyze sensor data on individual UV grids, and to see how light interacts within 3D geometric surroundings.

The Challenge

It is often necessary to display surface sensor data such as illuminance on complex, multi-surface geometry. Mathematically, optical handling of light data on a UV grid is only possible for single surfaces. Therefore, the display and visual inspection of actual sensor data in multi-surface shapes leads to a multitude of sensors on the base surfaces of those geometries.

The Solution

LucidShape® software delivers the following solutions for designing complex sensor surfaces:

- To display surface sensor data on complex geometries, LucidShape creates a mesh of the geometries
- By creating a joined mesh from a large number of surfaces, LucidShape maintains the original surface contour
- LucidShape assigns any surface sensor material to the mesh
- LucidShape displays and analyzes the data display in conjunction with model geometry in 3D

For more information, please contact Synopsys' Optical Solutions Group at (626) 795-9101, visit synopsys.com/optical-solutions/lucidshape, or send an e-mail to lucidshapeinfo@synopsys.com.

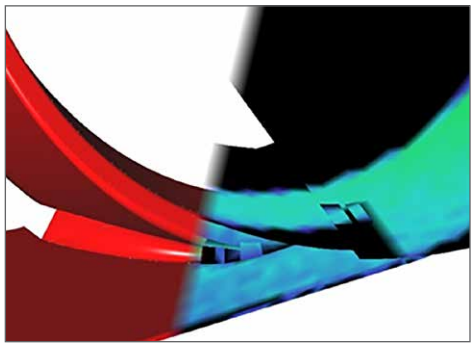

Figure 1: Multi-sensor arrangement to visualize illuminance on a bezel frame

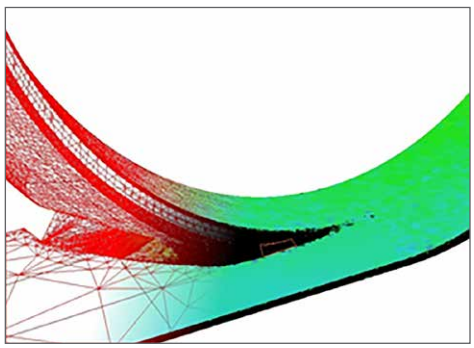

Figure 2: LucidShape meshed geometry for sensor data smoothly follows the original surface contour

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