VRXPERIENCE

Light Simulation

Part of a collaborative solution with Autodesk® Inc, Ansys VRXPERIENCE Light Simulation seamlessly fuses Ansys' physics-based lighting simulation with Autodesk's automotive 3D visualization and virtual prototyping software (Autodesk VRED®) to deliver engineering grade light simulation for studio designers that empowers their decision-making abilities and protects their design intent.

During product development, design intent may not always match engineering constraints. This disconnect between concept and reality could balloon into a costly and time-consuming iterative process where the design and engineering teams share ideas until they agree on a safe and aesthetically pleasing design.

Physically Accurate Interior and Exterior Lighting Simulation are Critical for:

- Driving the development process's accuracy and reliability
- Ensuring the final product's perceived quality and branding
- Confirming visibility and legibility of interior dashboard systems

Benefits for the Design Studio

- Create powerful and innovative lighting systems.
- Establish uniquely identifiable light signatures.
- Increase visualization accuracy for future products before production in Autodesk VRED.
- Accelerate the design decision-making process.
- Explore a wider range of design possibilities.
- Easily identify lighting quality issues resulting from the optical engineering process.
- Create a shared data stream that bridges the communication gap between engineering and design teams to ensure data consistency.
- Perform early feasibility assessment of design intent.

Empowering Designers with Cutting-Edge Capabilities

- Import meshed Autodesk VRED designs into VRXPERIENCE.
- Import engineering data and optical components from Ansys SPEOS or any other optical engineering software, preserving optical properties.
- Combine, align and ensure consistency between design studio and engineering data.
- Add missing optical properties, material properties and light sources, based on Ansys' optical library.
- Run Ansys SPEOS-based ray file simulation, compatible with high-performance computing (HPC) clusters, via a user-friendly interface.
- Generate ray files.
- Import ray files into VRED to generate ray-traced renderings.

DESIGN INTENT

ENGINEERING CONSTRAINTS
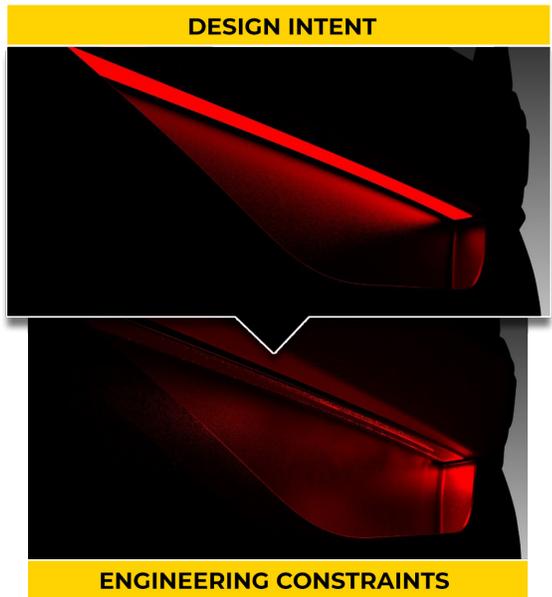
The design intent of a lighting system (top) compared to a first engineering proposition.

Lighting simulation of a car's interior at night with Autodesk VRED and Ansys VRXPERIENCE Light Simulation.

/ Leverage a Seamless Workflow to Protect Your Design Intent

Time-consuming iterations between the design team and the engineering team may introduce data inconsistencies when importing data between software.

Ansys VRXPERIENCE Light Simulation's seamless workflow ensures data consistency and places physics-based lighting simulations in the design team's toolbox.

EXPORT
DATA

AUTODESK VRED

COMBINE
(Ensure data consistency)

AUTODESK VRED MODEL

OPTICAL MODEL

Delivers engineering-grade light simulation to studio engineers

Ansys
VRXPERIENCE
Light Simulation

ASSIGN
Optical properties with Ansys optical library

EXPORT
RAYFILE RESULTS TO VRED

FINISH LIGHT PROPAGATION IN AUTODESK VRED AND REVIEW

EASY-TO-USE SPEOS-BASED LIGHT PROPAGATION SIMULATION

The workflow detects defects such as lighting uniformity or light leakage that cannot be discovered without optical simulations and validates lighting appearance design intent.

This expedites the development cycle by empowering designers with on-demand optical simulations. By sharing these simulations capabilities with designers, engineers save time by reducing the iteration process, speeding their product's path to market.

/ Ansys VRXPERIENCE Product Line

- VRXPERIENCE Driving Simulator Powered by SCANeR
- VRXPERIENCE Sensors
- VRXPERIENCE Headlamp
- VRXPERIENCE HMI
- VRXPERIENCE MRO
- VRXPERIENCE Perceived Quality
- VRXPERIENCE Sound

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