Standards-based SDK for high-fidelity, real-time visual simulation.

SimHDR by Renaissance Sciences Corporation is a Software Development Kit (SDK) adding physics-based signature modeling and high-dynamic range rendering capabilities to existing visualization applications. SimHDR combines signature predictions anchored in the physical sciences with the expanding power of commercial graphics hardware technologies to deliver complex GPU-based physical effects in real-time. SimHDR’s open API and minimally-invasive GPU shader management technology provides portability to any existing OpenGL-based application.

Real-time Multispectral Scene Signature SDK

SimHDR provides plug-in modeling and shader-based rendering of physically-accurate illumination, atmospherics, and cultural lighting.

High dynamic range treatment of entire scenes SimHDR’s illumination and parametric atmospheric effects are provided for all scene surfaces. When combined with SimHDR’s fully-featured sky, ephemeris, and cultural lighting rendering models, SimHDR provides high dynamic range rendering in natural radiometric units for your entire scene.

Cross-platform, correlated, multispectral virtual environments SimHDR’s portability, ease of integration, and multispectral operation provide a key enabler of next-generation common virtual environments within cross-platform distributed visual and sensor simulation architectures.
Natural solar/lunar illumination: SimHDR’s high-dynamic range lighting dramatically improves the realism of virtual environments.

Realistic atmospherics: SimHDR predicts and renders the effects of directional scattering and absorption for aerosol, gas, and hydrometeor layers.

Cultural lighting: Through the employment of physics-based light maps and light point models, SimHDR provides next generation realism and density of urban environments.

Waveband selectable: SimHDR supports selectable wavebands including visible, near-infrared, short-wave infrared, and long-wave infrared.

Renaissance Sciences Corporation is a privately-held, entrepreneurial technical services firm committed to excellence, agility, and a customer-oriented culture. Our Modeling and Simulation Services business unit combines a broad range of scientific and engineering disciplines to deliver synthetic environments, virtual training, and mission rehearsal solutions.

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