ICEM Surf
Realtime Rendering

Realtime Creation and Presentation Tools for Dynamic Photo-Realistic Representation of 3D Models

An add-on module to ICEM Surf Professional, ICEM Surf Realtime Rendering module is used to create digital static photos and support live presentations and design reviews.

Supporting a Reality Modelling experience, users are able to perform all modification, analyses and dynamic form changes on the model, keeping the photo-realistic appearance at all times, within one software environment.

Key capabilities

Material
From the integrated library the user selects the appropriate materials. Colour, shine, reflection, transparency and texture are predefined, but may be varied. Bump Map display mode can be activated in in realtime mode, which allows an even more realistic representation of surfaces with 3D structures like leather or wood.

Tessellation
 Individual tessellation tolerances (display quality) can be assigned to Surface and curve Objects to improve the realtime dynamic performance.

Environment
A standard library of environments offer users the ability to define and apply their own their own images on Cuboid, Cylindrical or Spherical rooms.

Highlights and Hidden Lines
Highlight, Reflection line and Hidden line effects may also be added to enhance the display of virtual objects.

Light
Offering different light types of beam, spot, ambient and point-light with the possibility instantly alter the Position, colour and brightness of the lights in real time further enhances the visual experience.

HDR-Images
Support of High-Dynamic-Range (HDR) images, which contain very high brightness data, even more realistic renderings can be generated.

Shadows
Support of light source generation of shadows that can be dynamically adjusted to define varying levels of Hardness or Softness.

Depth of light
Simulates the blur of a camera lens beyond its focus point.

Reflection
The environment, or a specially selected image, is reflected into the model.

Anti Aliasing
With Anti Aliasing a very high display quality can be achieved and alias-effects can be avoided.

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Stereo-Mode

With the appropriate hardware (i.e. big-screen projector and glasses) you can use the stereo function to give your presentation a 3D-depth perception.

Animation-Mode

As well as the interactive presentation options, video like animations can be produced within ICEM Surf by the selection of different views of the object. The System then calculates smooth transitions between the different views. The animations can be reviewed in different modes like loop or swing. All calculated Images may be exported in Tiff format to the hard disc for generating video files. Another animation feature is the Turntable function. Here the object is turned around the z-axis while the environment stays unchanged.

Digital Mock Up (DMU)

The Reference Manager from the ICEM Surf Professional module enables you to visualize, or define multiple configurations of large amounts of all types of 3D data, without storing it in the current database. Dynamic multiple clipping planes also make it possible to look at cuts through complex structures, useful for visual and collision analysis, and to place sections there for future reference.

Customer benefits

- o Designers and Engineers are able to perform highly photo-realistic 3D-presentations, without the need for expensive third-party software.

- o Decision maker and manager have the opportunity to check the design directly on the virtual model.

- o Easy to use with very little training requirements.

- o Photo-realistic images are produced quicker because the various visual settings change dynamically, for instant feedback. No need to wait for slow batch rendering processes.

- o The original surface data is being used. So no time-consuming conversion to facets is needed.

- o Instant modifications to object surfaces are possible within realtime render mode.

- o Large amounts of data or very complex models can be quickly and easily displayed.

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