True 3D visualization for OpenGL

In full control of your real-time 3D performance

Empower your interactive OpenGL applications with the WOWvx OpenGL Control to create a true 3D viewing experience with exciting out-of-screen effects. It gives application builders and owners full control to enable their content for Philips autostereoscopic 3D displays.

The latest release of the WOWvx OpenGL Control now also supports the unique Declipse content format, which enables ‘look around’ effects.

Exciting out-of-screen 3D effects
- Stunning 3D viewing experience on Philips 3D displays
- 3D viewing of new and existing OpenGL based applications

Straight forward implementation
- Elementary WOWvx Open Control library and API
- Easy integration in OpenGL applications

Application performance comparable to 2D
- Real-time extraction of the depth information
- 3D application performance and distribution bandwidth close to 2D

WOWvx 2D-plus-Depth format
- Flexible 3D format for compatibility with existing infrastructures
- Designed for Philips autostereoscopic 3D displays

WOWvx Declipse format
- An extension of the 2D-plus-Depth format, including additional occlusion information
- Enables the ‘look around’ effect

Full control over 3D visual experience
- Depth factor, offset and range
- Picture quality enhancement

30 day WOWvx OpenGL Control trial version
- Available from www.philips.com/3Dsolutions
- Online license key purchase and activation for full version
Technical Specifications

WOWvx OpenGL Control

The WOWvx OpenGL Control makes additional functions available for an OpenGL application to fully control the visual experience on a 3D display. It is transparent to other OpenGL function calls. In most cases the WOWvx OpenGL Control will generate proper output for a 3D display even if the application does not call any of the API functions.

Available 3D visualization parameters

- Depth factor: amount of depth to be displayed
- Depth offset: depth range behind and in front of the screen
- Clear Edge: increase the sharpness of object edges in 3D
- Smooth or Raw visualization: gradual or sharp transition between viewing cones
- inverseProjection: enables or disables the use of the inverse of the projection matrix to calculate back from Z buffer values to Z coordinates
- Far and near clipping planes: the range of depth values used for objects of interest
- FarNear ratio: determines how Z buffer values are converted to Z coordinates

Other available functions

- Enable3Dmode: switch between 2D and 3D modes
- SignalBackgroundAvailable: signal that the frame buffer and/or Z-buffer contain the right color and depth information for the background in Declipse mode
- SignalZBufferAvailable: signal that the Z-buffer contains the right depth information
- SelectFormat: select the format of the 3D output that will be provided to the display (2D-plus-Depth or Declipse)
- SetApplicationResolution: disable auto-detection of the application window size and use the specified values instead
- SetInputResolution: set resolution of input that will be generated for the WOWvx OpenGL Control

Operating system compatibility

- Windows XP Professional SP2 32 and 64-bit
- Windows Vista Ultimate 32 and 64-bit

Graphics card compatibility

The WOWvx OpenGL Control is known to work on the following graphics cards:

- NVIDIA GeForce 6200
- NVIDIA GeForce 6600
- NVIDIA GeForce 6800GT
- NVIDIA GeForce 7800GT
- NVIDIA Quadro FX 1400

WOWvx OpenGL Control

Philips 3D Solutions introduces the WOWvx OpenGL Control to support the visualization of OpenGL based interactive applications in 'true' 3D on autostereoscopic multi-view 3D displays. With this the rich legacy of existing applications can immediately benefit from stunning 3D viewing experience. The WOWvx OpenGL Control enables real-time extraction of the depth information from the graphics library and thus real-time visualization on the 3D display with an application performance close to 2D. Moreover it provides application builders and owners full control over the viewing experience of their content on a Philips 3D display by pre-defining settings such as depth factor, offset, and range as well as picture quality enhancement.

2D-plus-Depth and Declipse formats

To decouple content creation from content visualization, Philips champions the 2D-plus-Depth format. This flexible 3D format can easily be implemented into existing 2D creation and distribution infrastructures. The 2D-plus-Depth format comprises additional depth information with every 2D image. The depth information indicates the position of each 2D image pixel on the Z (depth) axis in or out of the screen plane. WOWvx OpenGL Control fully supports this flexible 2D-plus-Depth format.

The WOWvx OpenGL Control allows users of Philips autostereoscopic 3D displays to use the unique Declipse image format, which is an extension to the 2D-plus-Depth format. The Declipse image format enables a true look-around effect along with the 3D visualization. Furthermore, easy creation of 3D overlays is provided by applying the Declipse format with the WOWvx OpenGL Control.

The WOWvx content formats offer flexibility and compatibility with existing production equipment and compression tools. Moreover it allows the application of different 3D display screen sizes and designs in the same system. Supported by various companies across the display industry, Philips took the lead in MPEG standardization of 3D video based on the WOWvx 2D-plus-Depth and Declipse formats.

Low integral cost of ownership

Philips 3D displays and content enabling software are designed for maximum reuse of content and concepts from 2D. Key enabler are the WOWvx content formats that allow easy 3D content creation with standard tools and content distribution using existing infrastructures. This results in a flexible 3D system solution with optimal visual performance and low integral cost of ownership.

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