What's New in Visionary Render V1.2

Virtalis has made improvements right across Visionary Render's usability and functionality from increasing the number and diversity of controllers to adding gesture recognition and post-processing effects. In further developing our ground-breaking VR software, which now boasts enhanced support, Virtalis is grateful to its beta testers: Raytheon, AMRC, Rolls-Royce and BAE.

Tracking

Headlines

- Support for finger tracking
  - ART Driver adds finger tracking support (for supported ART devices)
  - New LEAP Motion driver
  - New CyberGlove driver
  - New 5DT driver
- New VRPN Driver for integration with VRPN supported devices
- Gesture and Pose Recognition
  - Allows flying through finger poses
  - Allows recording of custom gestures
  - Allows mapping of gestures to events

Other

- Untracked avatar for desktop presence in collaborative environments
- Two handed avatar with fingers for use with finger tracking
- Smoother immersive experience as updated to Oculus SDK 0.7 – Oculus Runtime 0.7 or higher is now required
- Improved ART driver performance

Rendering

Headlines

- Physically Based Shading (PBS)
  - Bringing materials closer to their real life representation
- Atmospheric Scattering
- Screen-space reflections
- Post process view filters
  - Allows additional rendering effects to be applied to the scene
  - Includes pre-configured filters for effects such as:
    - *Camera Motion Blur*
    - *FXAA*
    - *Depth of Field*
    - *Posterize*
    - *Edge Detect*
    - *And others…*
  - Advanced users can edit or create filters using GLSL directly from within the script editor

Other

- BETA: Support for loading Skinned meshes and morph targets
- BETA: NVidia Interactive Raytracing
- BETA: Support for loading VRay materials exported from 3DStudioMax
- Multiple Oceans in a scene
- Light probe interpolation
- Option to block shadow map updates for an individual light
- Option to disable shadow casting on an object while it is being moved with the mouse or tracker

- Oculus Rift now supports render-to-texture objects with the Stereo option enabled
- Oculus Rift now supports anti-aliasing
- Avatar Head model no longer obscures the view if the near clip plane is less than 0.1m

General

Headlines

- Annotations for design review
  - Allows placement of markers in the scene with associated comments and viewpoints
  - Markers can be placed by both desktop users and immersive users
  - Each user in a collaboration has different colour markers and their comments are labelled with their user name
  - Allows multiple text items to be added to document the scene
  - Maintained in a separate branch of the scene allowing annotations from a previous iteration of the scene to be merged into a new version of the scene using the Merge Assistant

Other

- Camera constraints - Transform Limits can be created on the Camera in the User tree, to limit camera movement
- Un-isolate - The inverse of the Isolate function, without having to force the entire scene to be visible
- Copy/Paste textures to/from windows clipboard for editing in external image packages
  - Image data can be copied from image editors (or Windows Snipping Tool)
  - Can be pasted into the Libraries Tree, Browser, or Texture Properties windows using the context menu options or control buttons in the properties window
- Setting that forces all save operations to save as Monolithic VRNative
- Visionary Render can now be run over Remote Desktop (graphics drivers permitting)
- Improves the stability of the geometry operators
- Adds Developer -> Clone Avatar to load an avatar with new UUIDs allowing it to be saved and used alongside the one it was copied from
- Scenes saved with links to items in the local user tree now save those links as special cases so that they resolve to whichever local user loads the scene
- Merge Assistant strips out DocumentOnLoad events if the merge would result in them being somewhere other than a child of the Scenes root node.
- Merge Assistant no longer duplicates the Scenes node when merging Scenes trees with consolidation enabled

User Interface

Headlines

- Dragging models from the browser now instantiates them in the scene
- Assemblies can be dragged and snapped to the 3D cursor aligned to the surface being touched
- Adds a Sea Level adjustment property to Ocean

Other

- Tree tooltips now display information about child nodes more meaningfully
- Adds a button to the Tools -> View window to toggle the laser pointer
- GUI windows take focus when being moved
- The option in texture properties to compress textures now supports compressing all selected textures
- Save/Restore transform options added to Assembly properties window
- Select in tree option added to the script editor to select the event being edited
- Adds CTRL+A to select all visible items in a tree view
- Adds Select -> Inverse to invert the current tree view selection
- Newly pasted objects are now automatically selected
- Pasting the same object multiple times now pastes as sibling to the last pasted object, instead of a child
- Large message boxes now have scroll bars instead of the entire box being larger than the screen
- Importers now have a menu option to display their user manuals

- Improves mouse support with Oculus Rift
- Assembly Reset Transform button now supports multiple selection
- Improves the speed of tree range selection
- Changing the link properties of multiple selected objects (e.g. Visual material) no longer requires the link to be cleared first.
- Viewpoint icons in the browser now match the lighting conditions seen in the main viewport
- When changing Assembly Constraint to Limit, a Transform Limits node is automatically created
- CTRL + P now correctly generates the property display contents if it had not previously been showing any properties.
- Allows tree view multiple selection using SHIFT + Arrow keys
- Clicking outside the save-on-exit dialog now results in not exiting, instead of exiting without saving
- Adds UseMaterialColour property to ModelMarkerStyle to tell it to use the material instead of the colour properties on the style.
- Renames the "Maps" section of the Material properties to say "Texture Maps" to clarify what they are
- Provides keyboard focus to the script console output window to allow the standard clipboard keys to be used to copy the text

Simulation

- BETA: Inverse Kinematics
- BETA: Anthropometrics

Animation

- Permits multiple sequences to be opened at once in the Sequencer.
- Sequences obey any constraints on target nodes during playback. Animation is retargeted to the parent if constrained to parent.
- Keyframe rotations are no longer ignored when orienting to a path or target, which permits roll to be added for instance.
- Adds setting to permit visuals to be shown for every sequence in the Scenes tree instead of just for the current sequence.
- Animations can be split and merged in the Sequencer via the context menu.

Events and Scripting

- Viewpoint creation Lua functions
- Viewpoint capture Lua functions
- Lua functions for extracting texture and audio data
- Assembly fly-to triggers new events – Leave on the last assembly, Activate on the target, Enter on the target when the fly sequence is complete.
- Key events now distinguish key presses and key presses with modifiers (e.g. z, vs ctrl+z)
- Adds missing Lua keyword "in" to the list of words highlighted in the script editor.
- Allows the clipboard Lua interface to operate on individual nodes as well as selections.
- Adds Toggle as an option when dragging a Group onto an event in the Event table.
- DocumentOnLoad events are replaced with Viewpoints that are applied on load. New scenes that are saved when the "Save Camera" setting is enabled will no longer create DocumentOnLoad events.

Cluster and Collaboration

- Optimisation of VRTree Cache files
- Cluster GUI stability improvements
- Optimises cluster rendering when the view configuration specifies a single viewport shared by all cluster members
- Removes the cluster resolution limit of the graphics card's maximum texture resolution when using a view configuration where all cluster members share a single viewport

Support

- Log files included next to crash dumps
  - No need to separately run –logall
  - Both files are named with the same date and revision
- Dump Support Log menu item
  - Allows logging of runtime information
  - Dumps the log file to the desktop, ready for attaching to an email