Empower your design visualisation with VRED Design

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About the speaker

Robin Oldroyd

Senior Technical Specialist at Autodesk, based in the UK. Focused on EMEA, talking to customers about Autodesk Vision for Studio of the Future in Automotive. Robin has been with Autodesk since 2006, during which time he has been involved in support, pre-sales, post sales and Technical marketing. In Industrial Design, Consumer Products, Automotive & Transportation
Empower your design visualisation with

VRED Design

This class will expand your learning with VRED Design and introduce you to preparing a scene to use in virtual reality. We will cover scene considerations, data optimisation, and workflows to utilise VR for design review with animation, interactions, and collaboration. We will show how to utilise VRED presenter as a platform to share your visual rich interactive designs.
Agenda

- Introduction to VRED
- Workflow
  - Data import & Preparation
  - Making it believable
  - Setting the scene
  - Adding realism & interaction
  - Telling the story – Single source of truth
- Want to take it further?
- Summary
VRED Design for Design review & Visualisation

- Informed Decision Making
- Visual Communication & Collaboration
- Marketing Quality Imagery
Widely used within Automotive
And other cool things ...
VRED offers **product designers** a high end visualisation tool and allows product configuration with quick and effective rendering and VR when needed.
Manufacturing can also benefit

VRED’s ability to handle large amounts of data, quick and efficiently makes it ideal. Making it your **single source of truth** for visualisation pipeline.
Workflow

• Data import & Preparation
• Making it believable
• Setting the scene
• Add interaction & configuration
• Telling the story – Single source of truth
Data import & Preparation
Data Import

• Native import supported from numerous file formats.
• 3dsmax & Maya animation import supported via FBX.
• Tessellation options define mesh simplification for the converted data.
• Any changes within the native 3D model can be updated within VRED.
Importing Models & Apply Materials by Name
Updating the Source
Switchable models & Touch sensors
Updating the Model
Making it believable
Placing your product

- Use HDR/EXR to define and Image Based Light environment
- Environments auto create a ground plane & environment object
- Environment ground planes have a transparent shadow material by default

Ground plane object  
Ground shadow  
360 Spherical Image (HDR/EXR/etc)
Adding an Environment & Lights
Using Backplates
Baking Lights & Shadow

- Pre Bake Ambient Occlusion and Shadows.
- Adds realism to the hardware shaded display and speeds up rendering.
- Add an additional light source to display real-time shadows (if required)
- Ambient shadows can be used to maintain fluidity in VR
Adding Ambient Occlusion shadows
Materials & Textures

- Wide variety of finishes supported
- Predefined material library based on VRED True Light Materials
- Materials are easily adjusted based on real-life parameters
- Convert imported materials and save edits to Asset library
  - **Benefit** next import with same material IDs auto update to VRED definition
Creating New Materials
Decals / Texture Mapping
Substance materials
Setting the scene
Depth of Field
Lense flare
Add interaction & configuration
Camera & Viewpoints
Keyframe animations
Product configuration
More complex animations
Single source of truth
Single source of truth
Development, catalogue & marketing images & movies
Render output for static VR, with ....
In process Validation & Design Review with VR
Cost effective VR station or point of sale

- VRED Presenter offers a cost effective point of sale solution
- Allows customers to run real time scenes in a read only environment
- Create a batch script to control how Vred Presenter starts up
  - Set the scene file, activation of VR display, setting of window size & position

"C:\Program Files\Autodesk\VREDPresenter-11.3\bin\WIN64\VREDPresenter.exe"
-nobanner -postpython "setFixedRenderWindowSize(1920, 1080):setRenderWindowDocked(0, false, NOBORDER):moveRenderWindow(0, 0, 0)"
"C:\Vault Workspace\Design Data\Projects\Packaging Machine\Vred\Pallette Packaging Machine - Final.vpb"
Setting up VRED presenter for VR review
Point of sale
Want to take it further
VR what else is possible
Human Machine Interface (HMI)
Interactivity & Mixed reality
Summary

VR

Point of sale

Remote Collaboration & Review

Colour & materials

In process Validation & Design Review with VR

Product configuration

Development, catalogue & marketing images & movies

Render export for static VR, with...