

AU LONDON 2019



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

Introduction to VRED Design



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

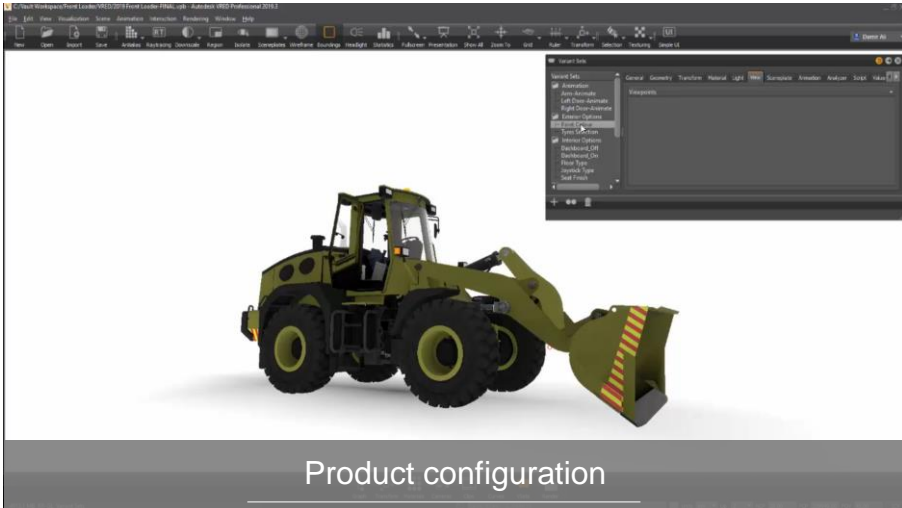
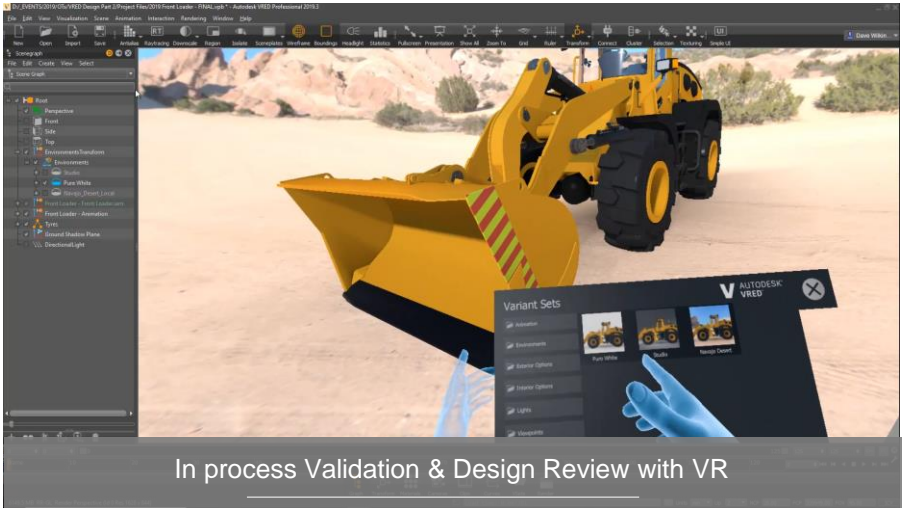


Image courtesy of Astro Studios

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.



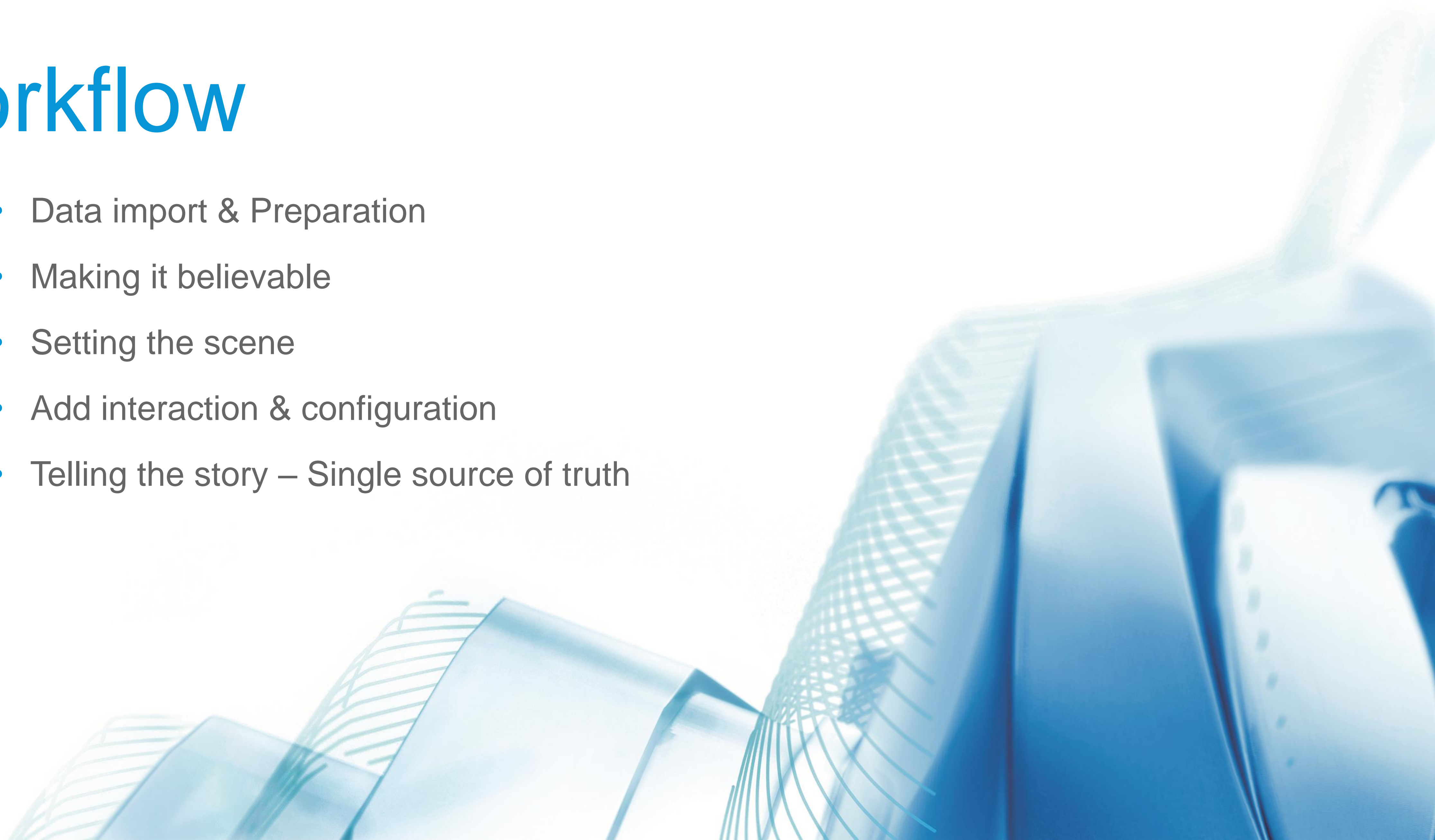


Single source of truth



Workflow

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

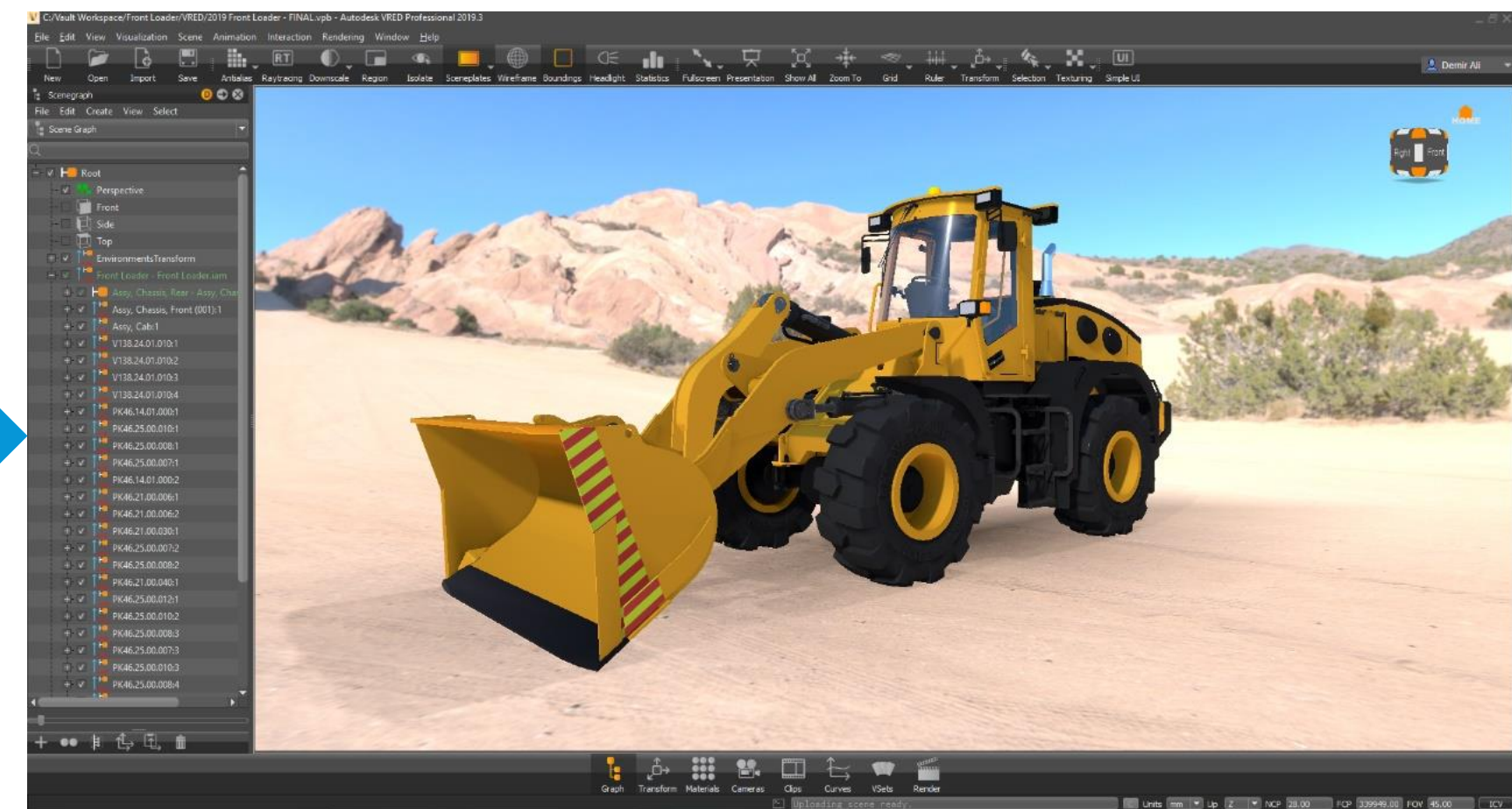
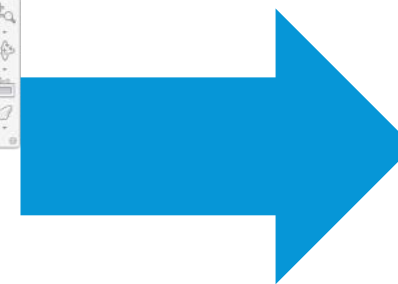
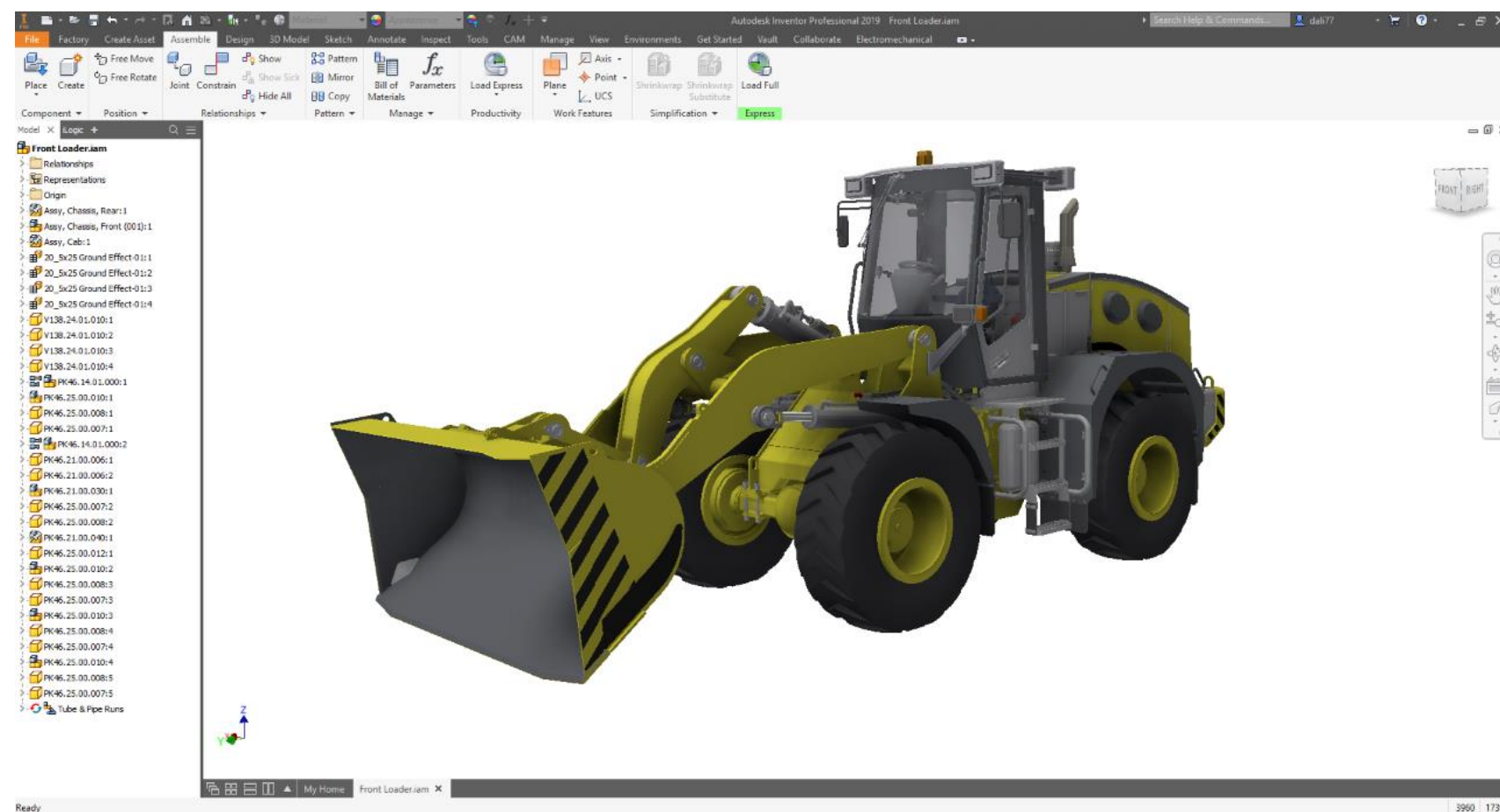


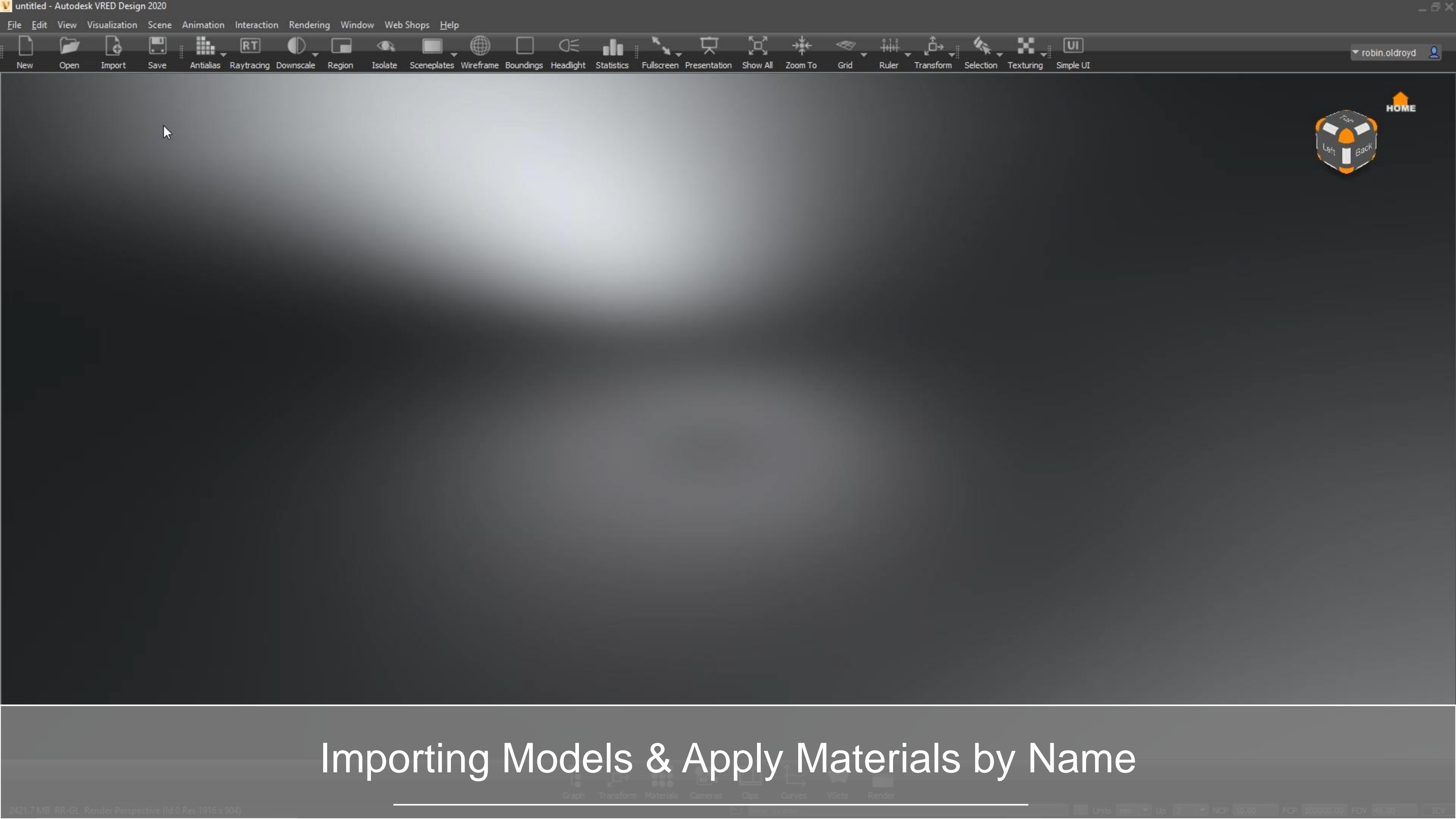
Data import & Preparation



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.





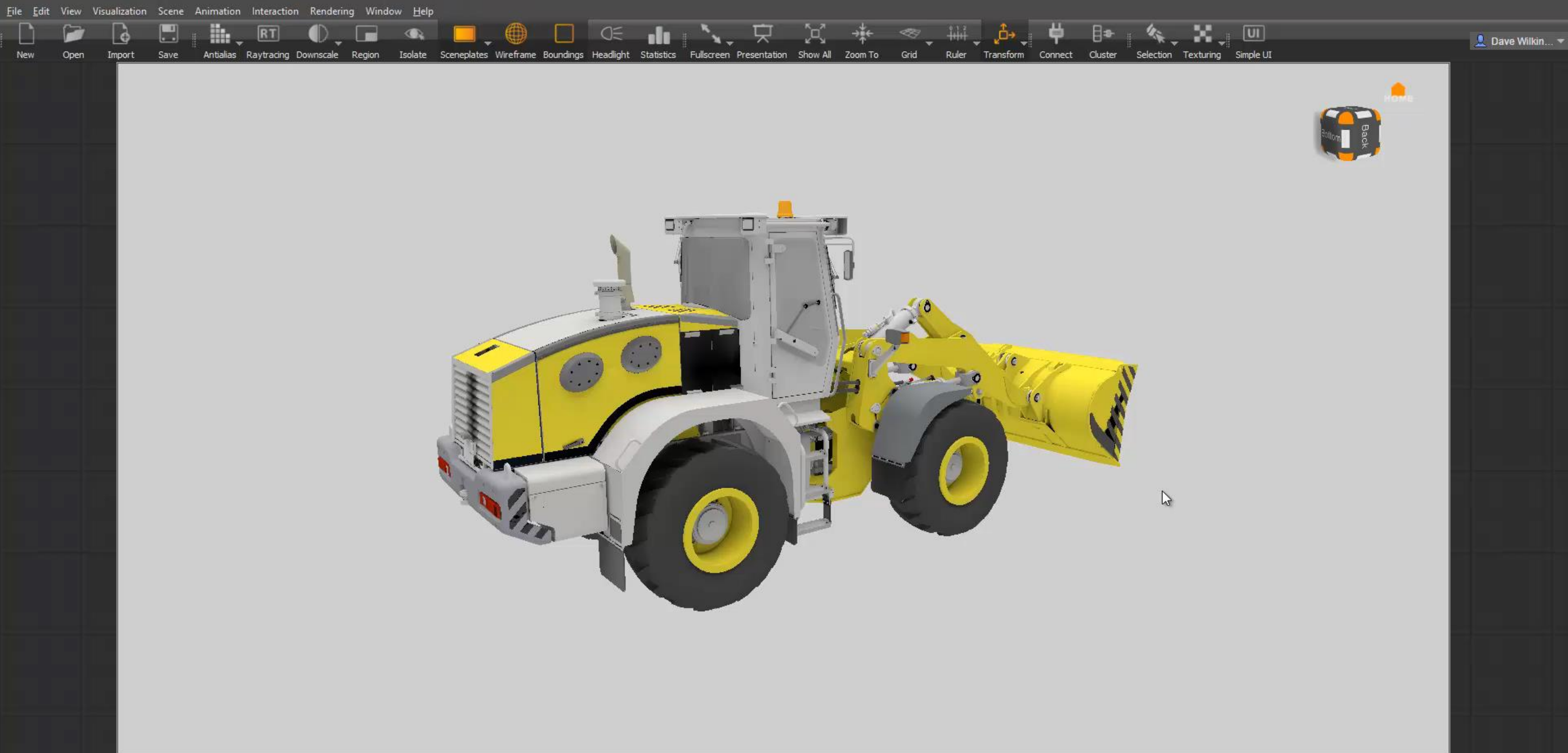
Importing Models & Apply Materials by Name



Updating the Source



Switchable models & Touch sensors



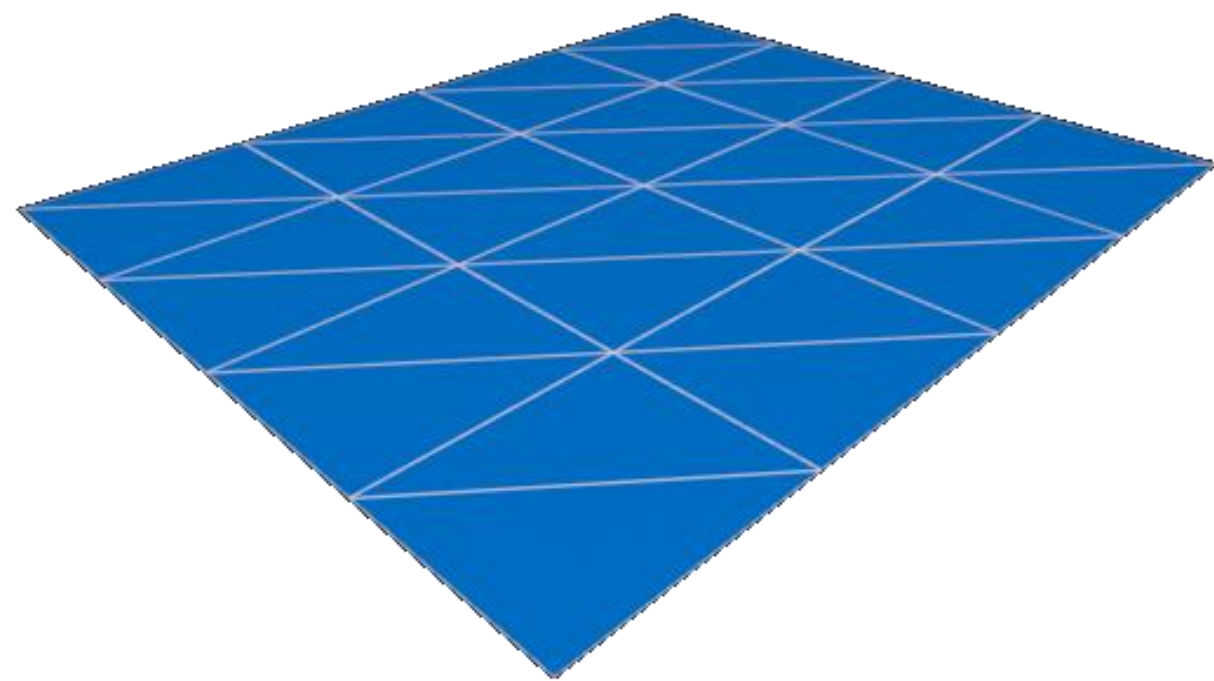
Updating the Model

Making it believable

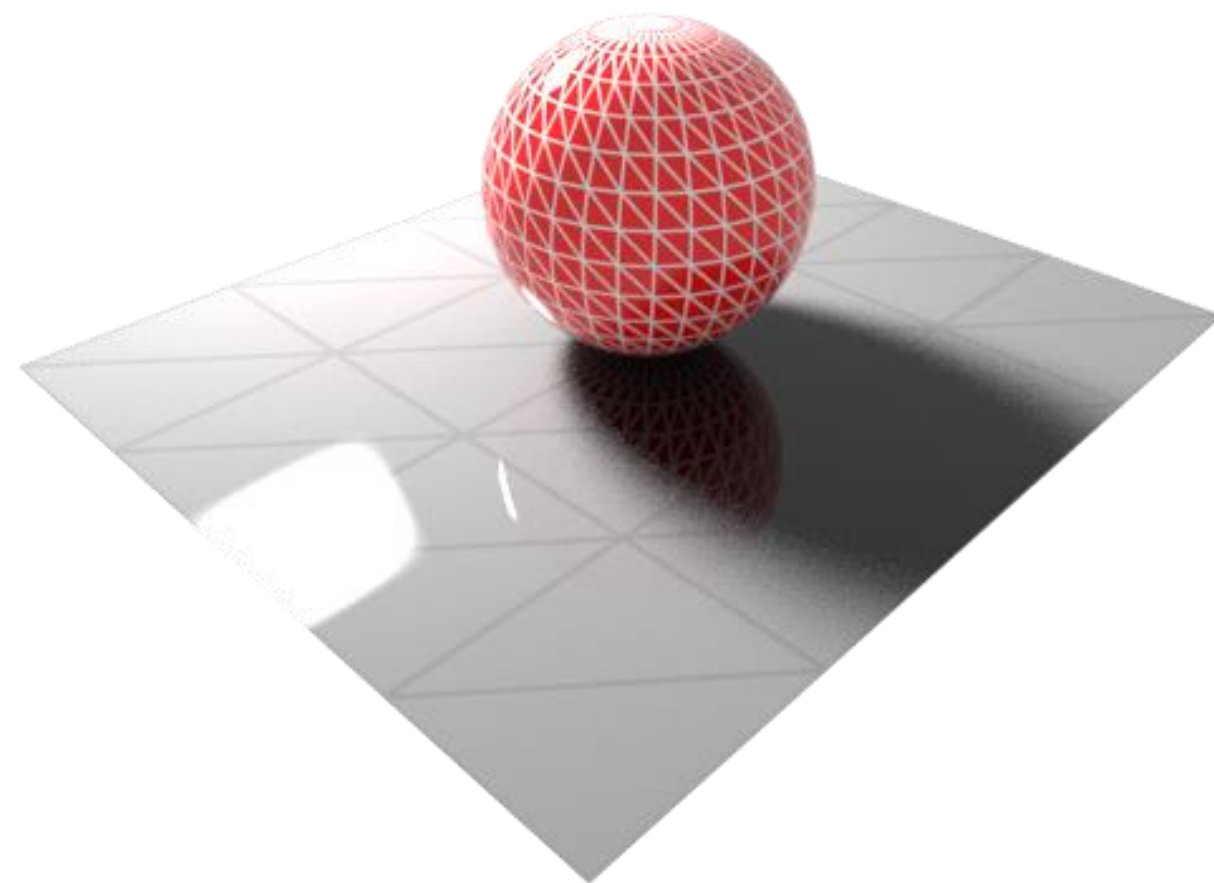


Placing your product

- 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



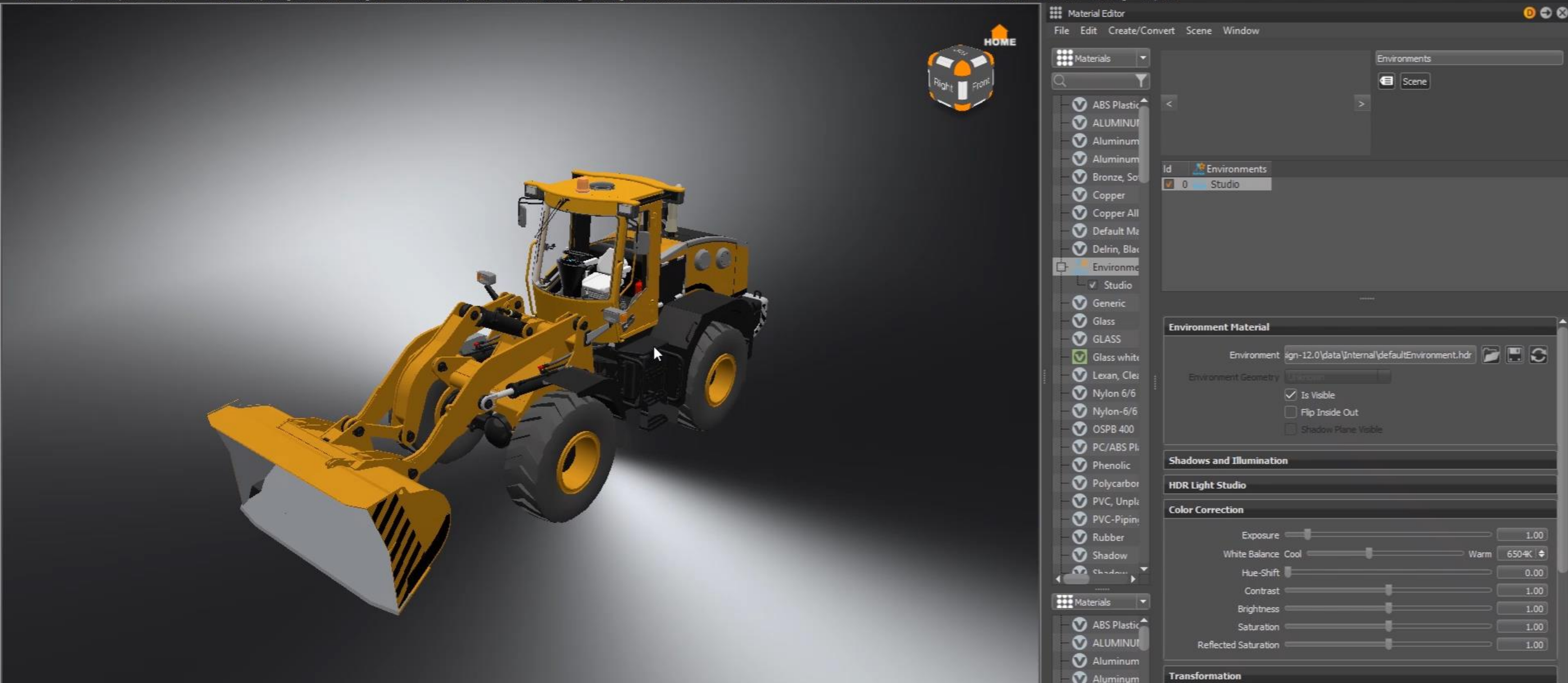
Ground plane object



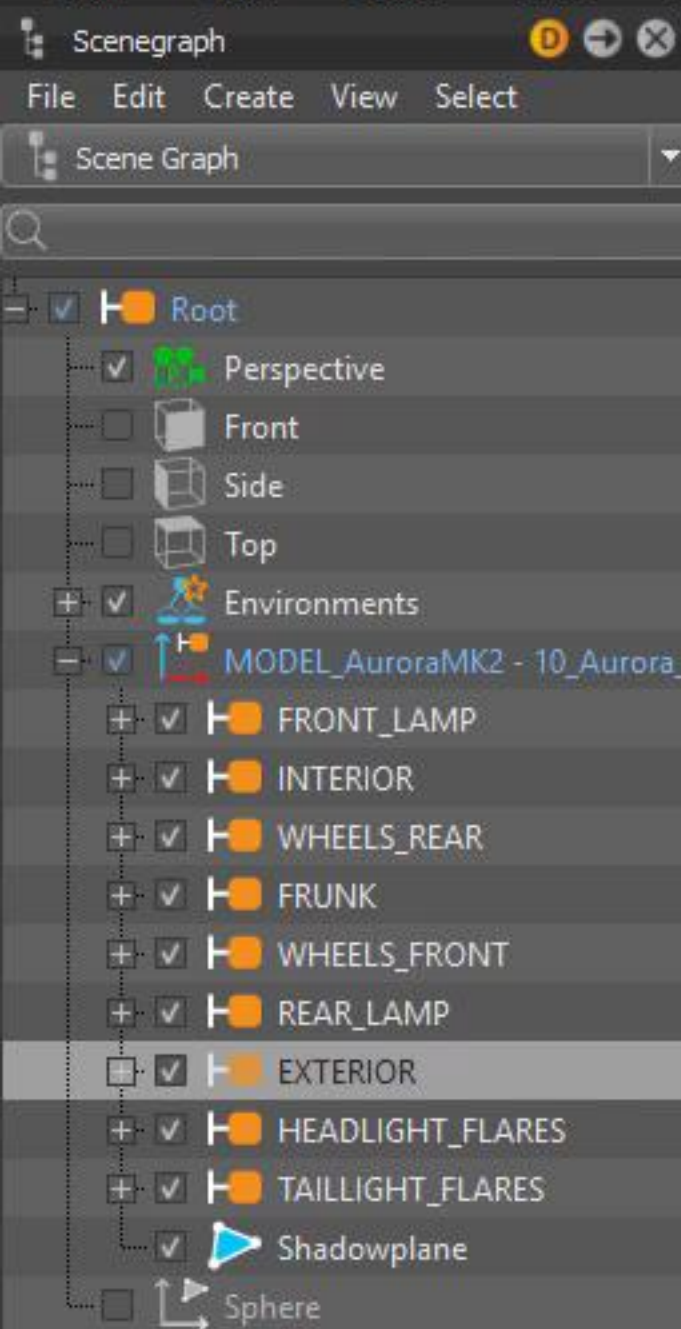
Ground shadow



360 Spherical Image
(HDR/EXR/etc)



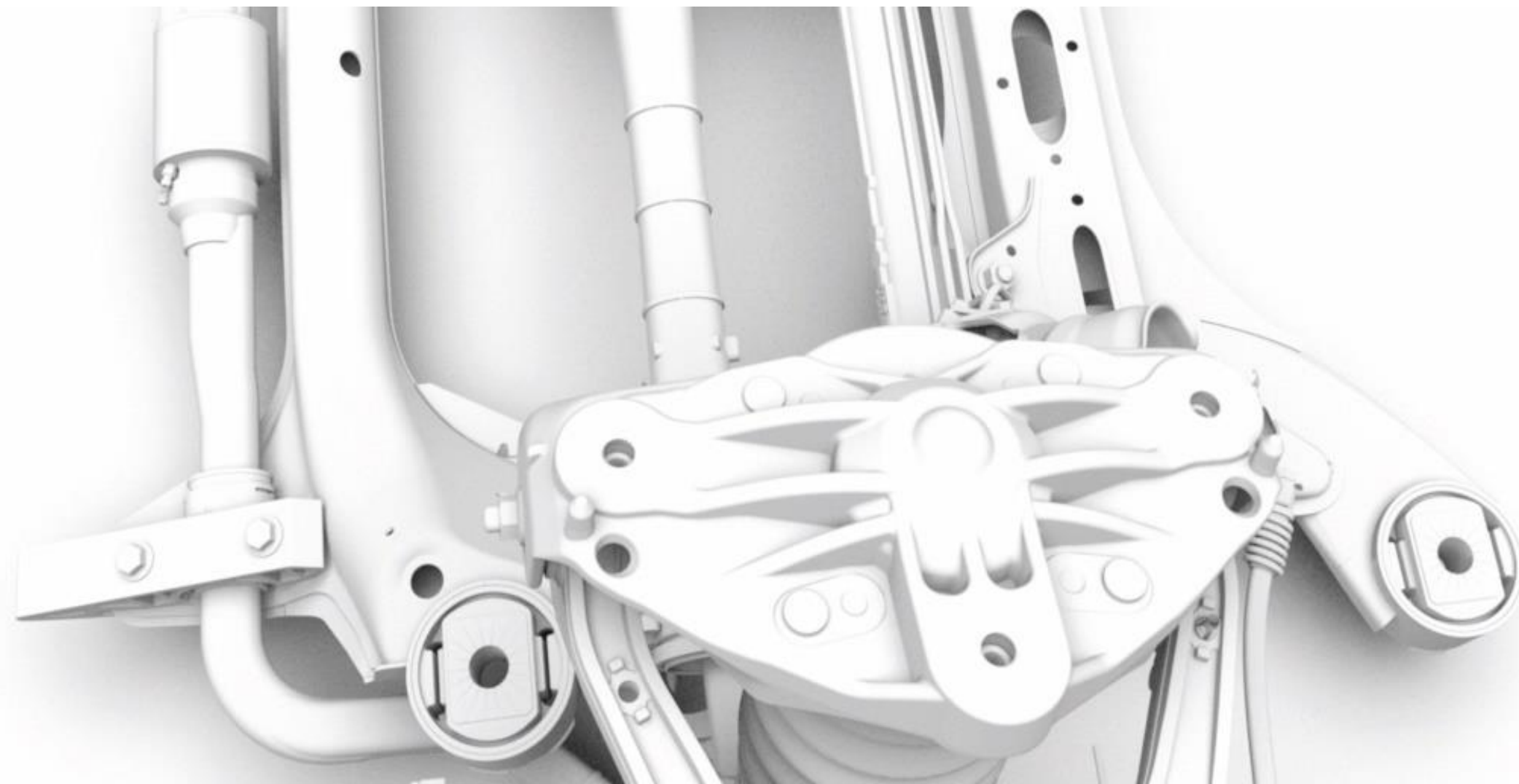
Adding an Environment & Lights



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





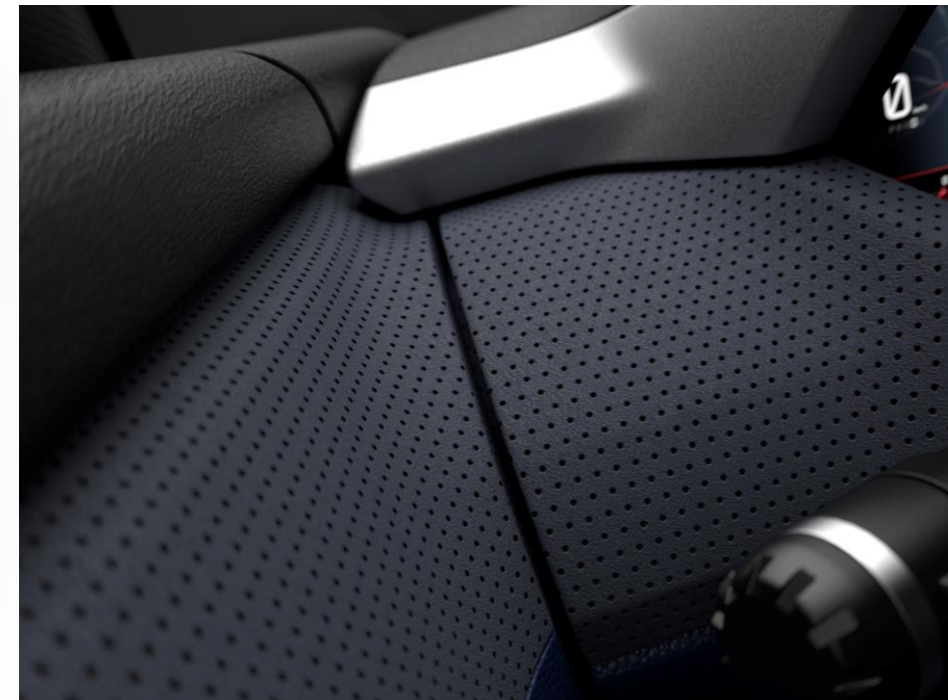
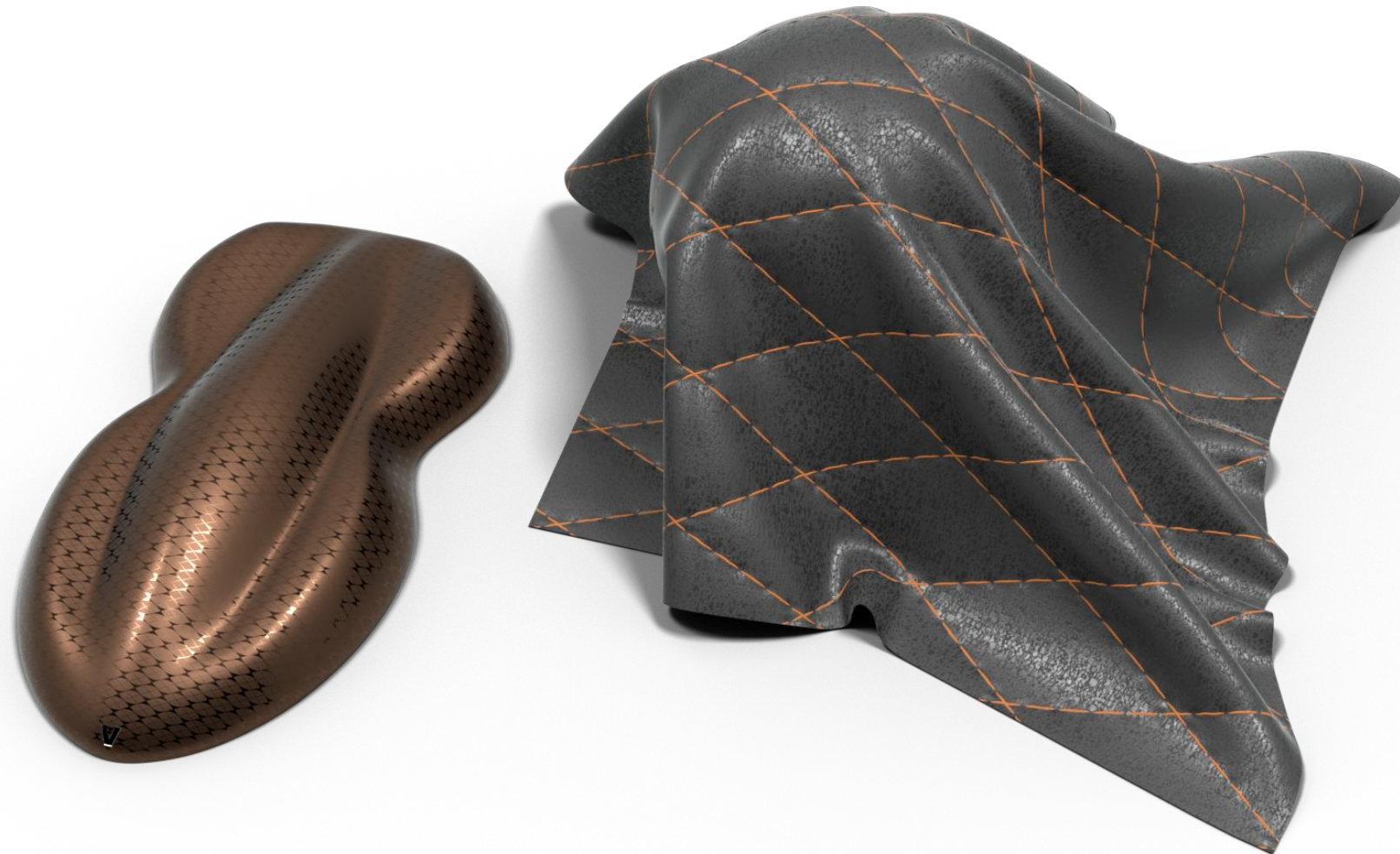
Adding Ambient Occlusion shadows



Adding a drop shadow

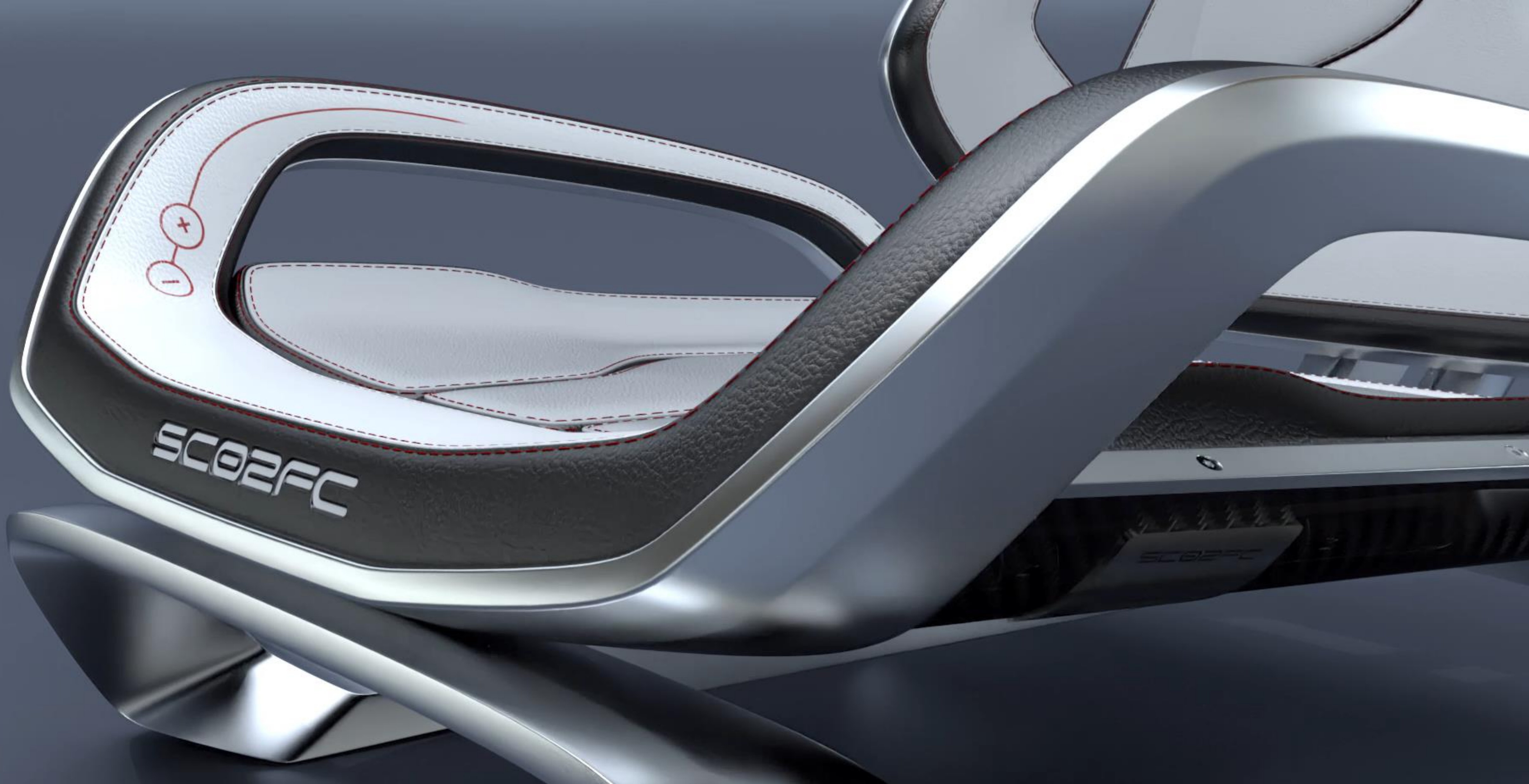
Materials & Textures

- 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

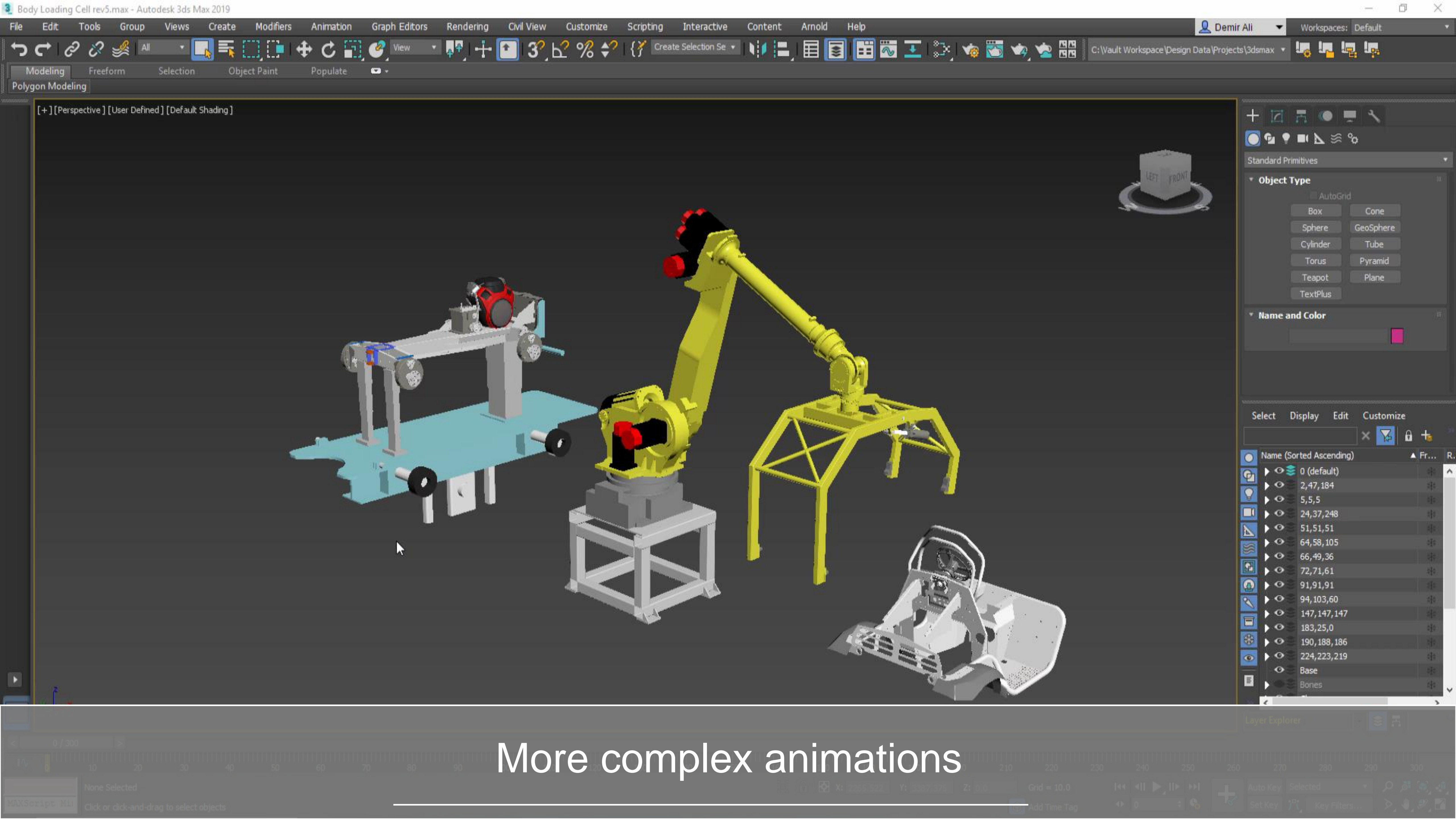


Camera & Viewpoints



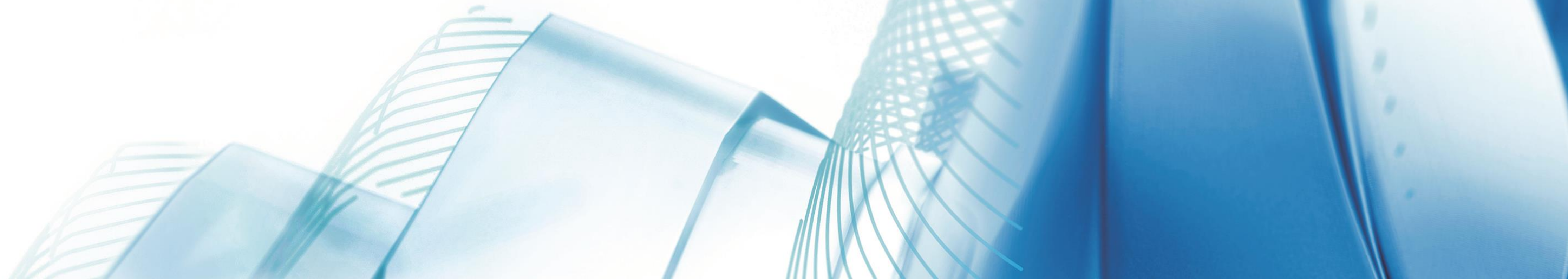


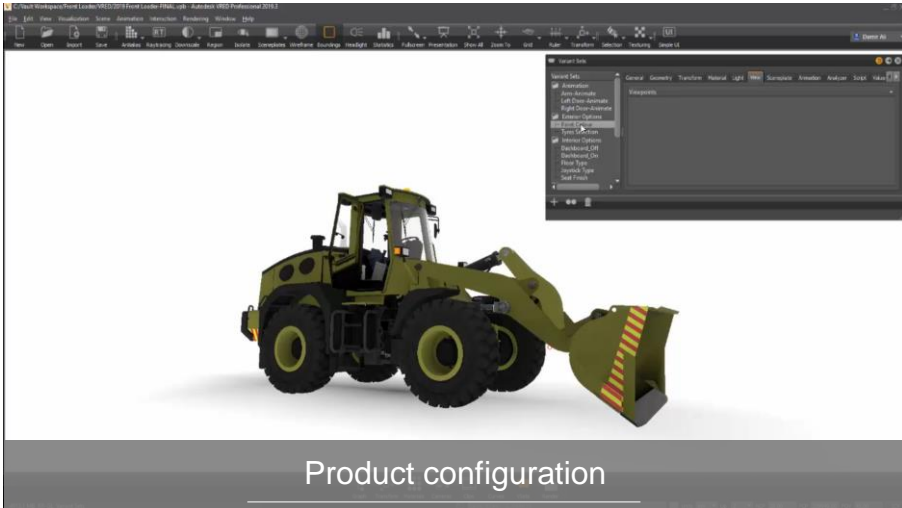
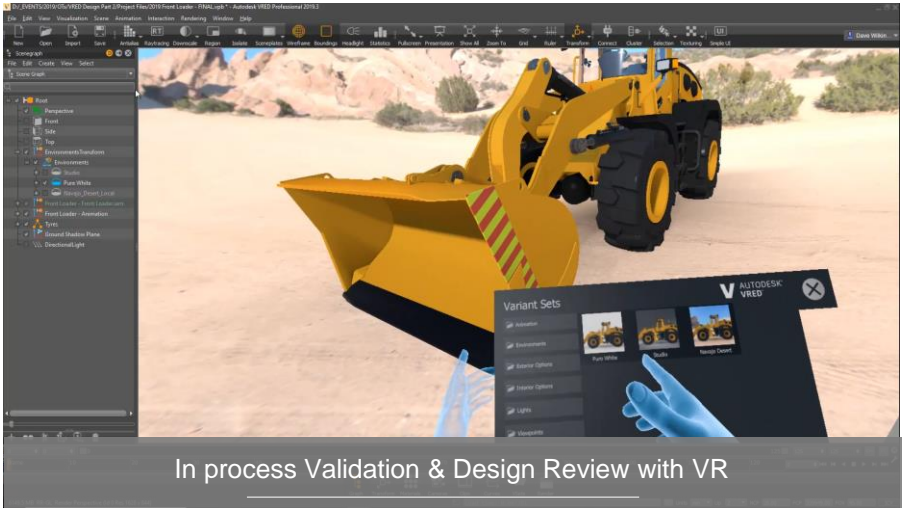
Product configuration



More complex animations

Single source of truth





Single source of truth

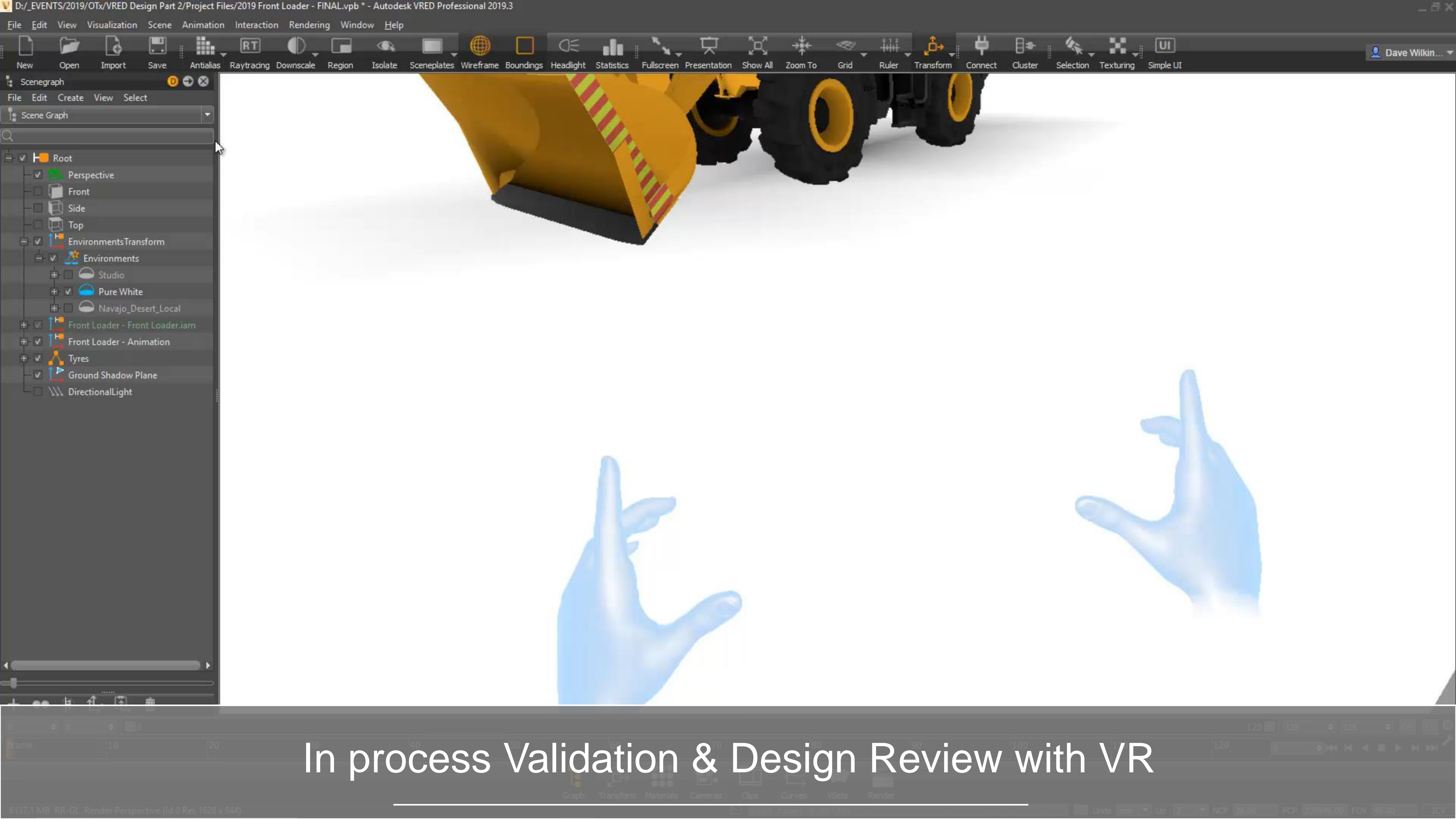




Development, catalogue & marketing images & movies



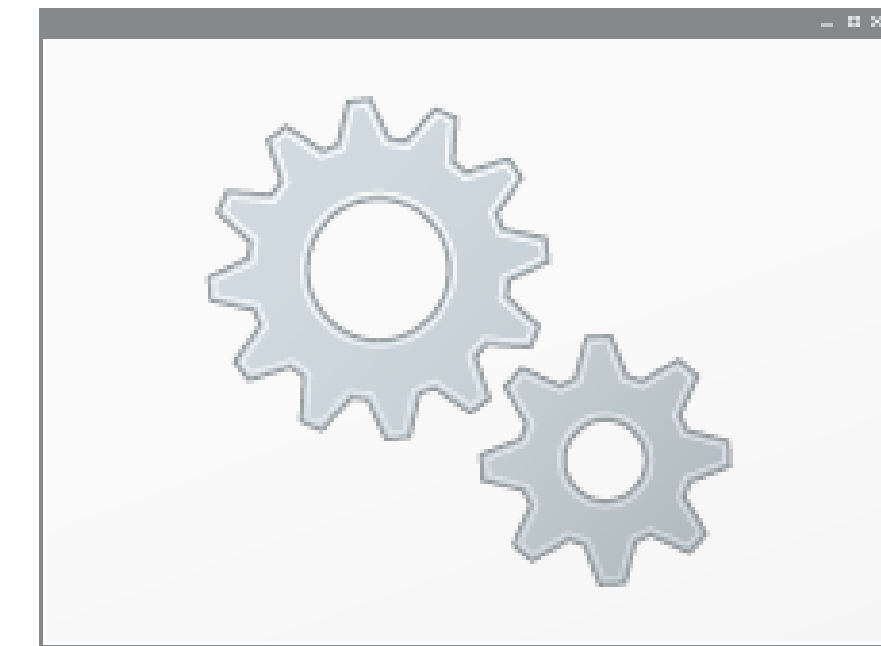
Render output for static VR, with



In process Validation & Design Review with VR

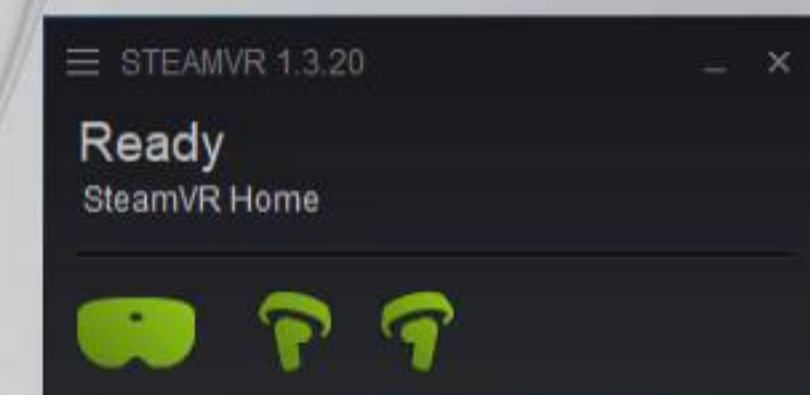
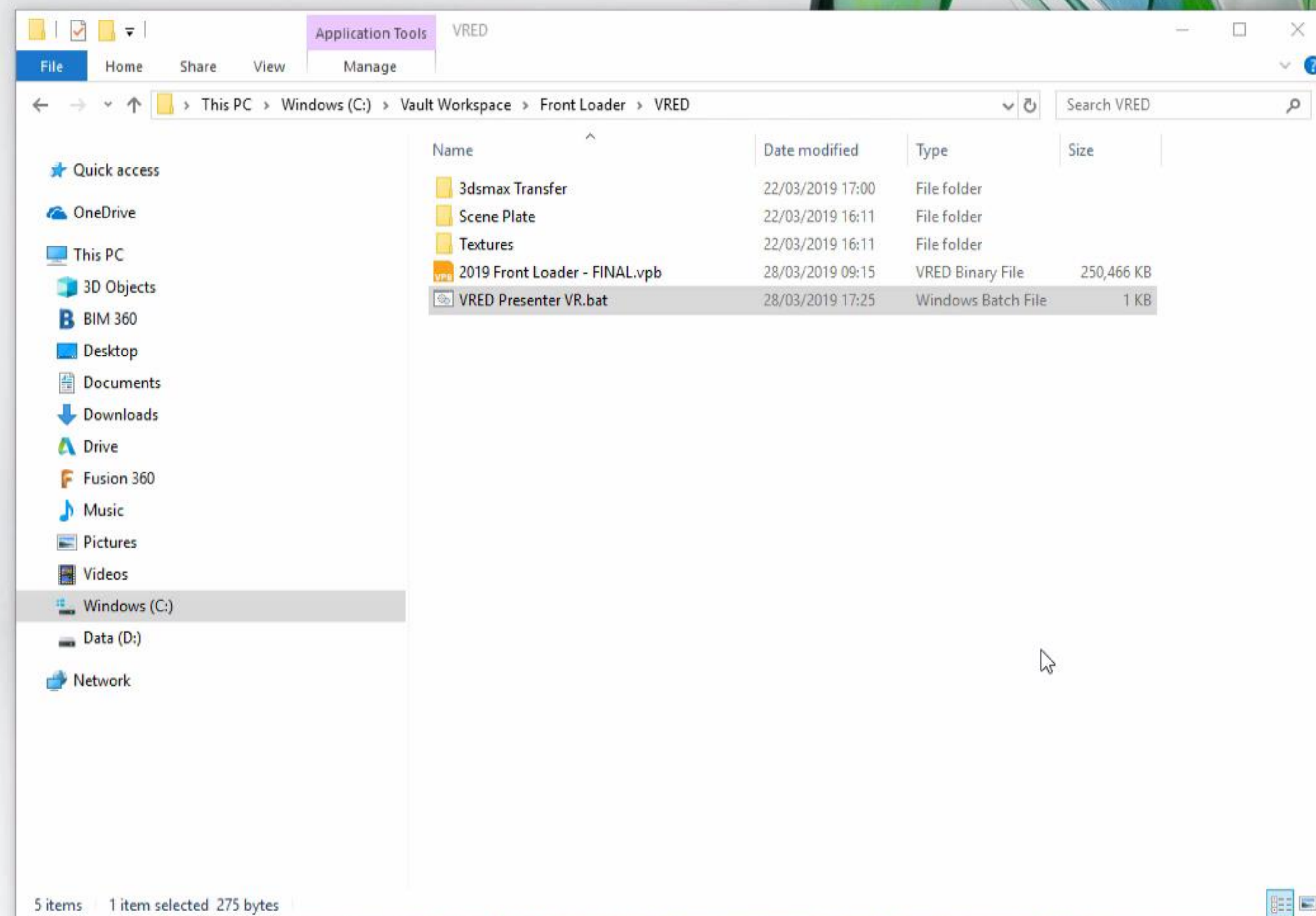
Cost effective VR station or point of sale

- 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



Vred Presenter.bat

```
"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\Palette Packaging Machine - Final.vpb"
```

Setting up VRED presenter for VR review



Point of sale



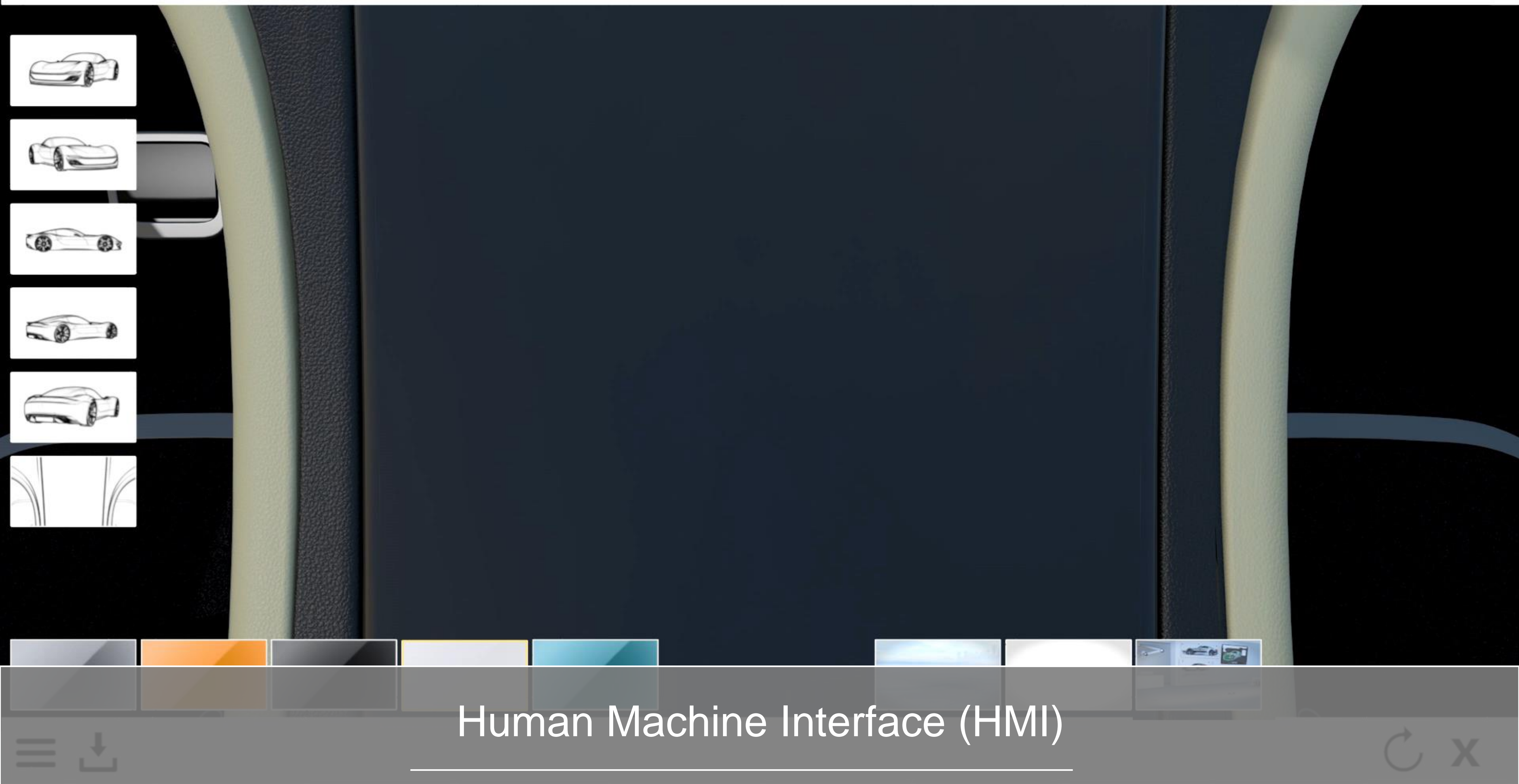
Remote Collaboration & Review

Want to take it further



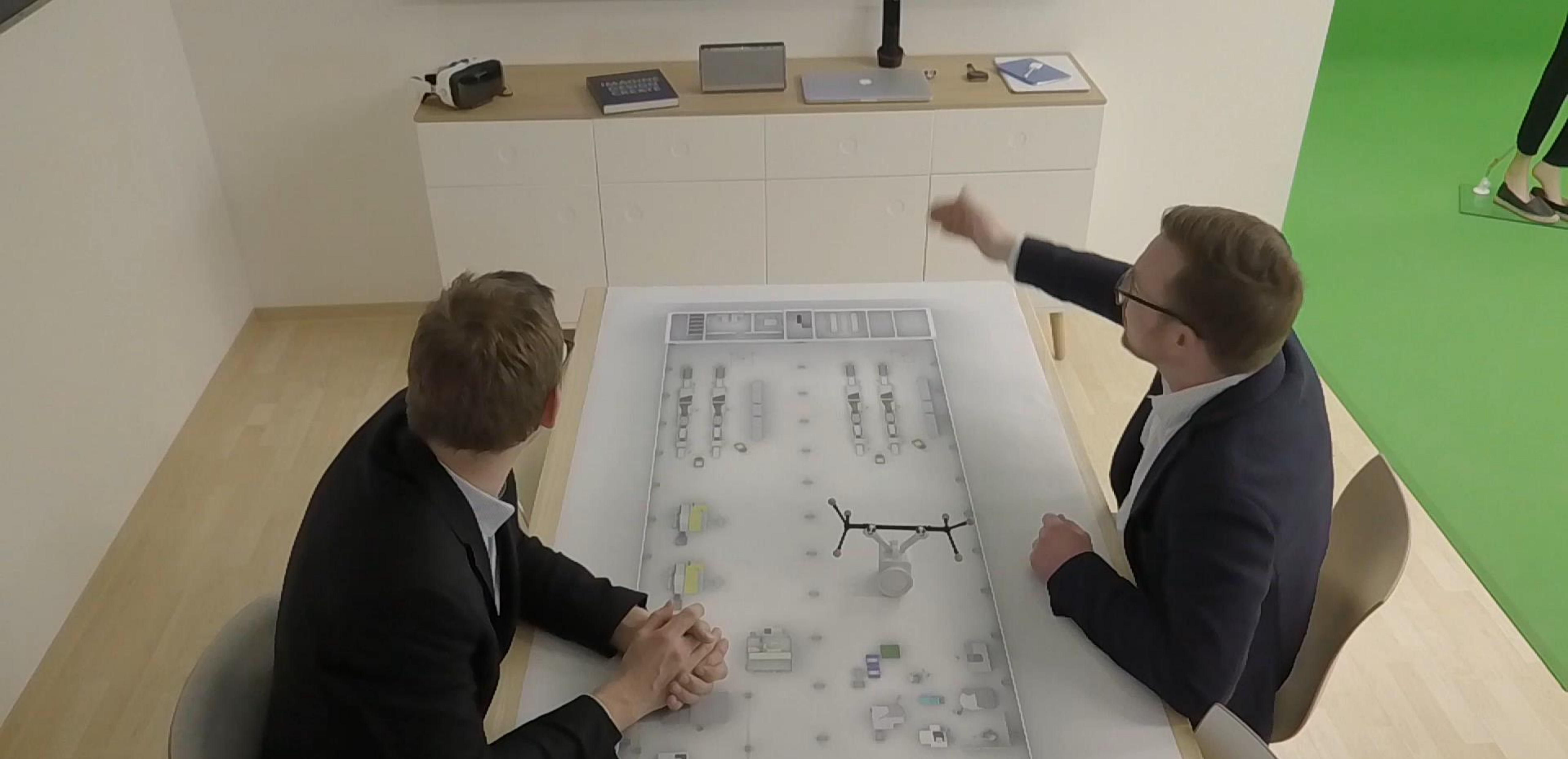


VR what else is possible



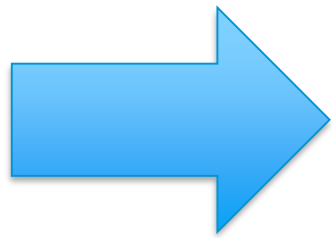
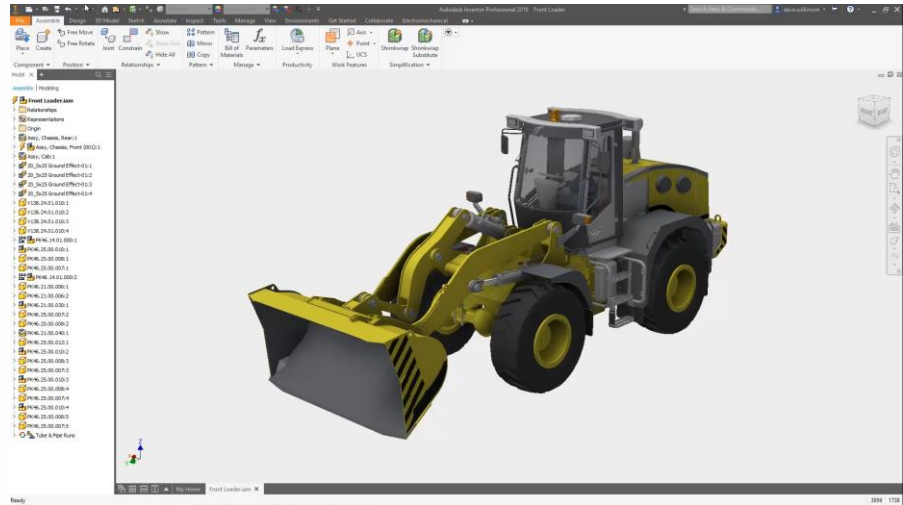


Stereoscopy / Powerwall



Interactivity & Mixed reality

Summary



Development, catalogue & marketing images & movies



Render output for static VR, with



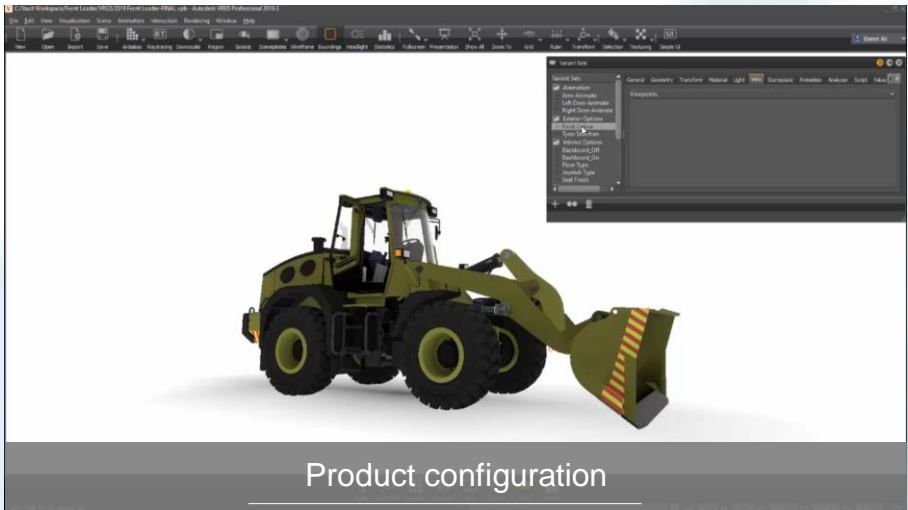
VR



In process Validation & Design Review with VR



Colour & materials



Product configuration



Point of sale



Remote Collaboration & Review



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