Getting Started with SRWorks in Unity

To develop applications in Unity with SRWorks, you will need to follow below things:

- Windows 8(or later) and 64 bits operation system
- USB 3.0 port
- Nvidia graphic card (GTX970 or later)
- HTC Vive Pro
- Unity (5.5.3 or later)
- Steam and SteamVR (Oct 14 or later)

Limitation

1. The culling mask of Camera of DualCamera (left) and its children must set same layer (layer 30 occupied by default).
2. The culling mask of Camera of DualCamera (right) and its children must set same layer (layer 31 occupied by default).
3. The culling mask of Camera of Camera (eye) must set the layers without above layers (without 30 and 31 by default).

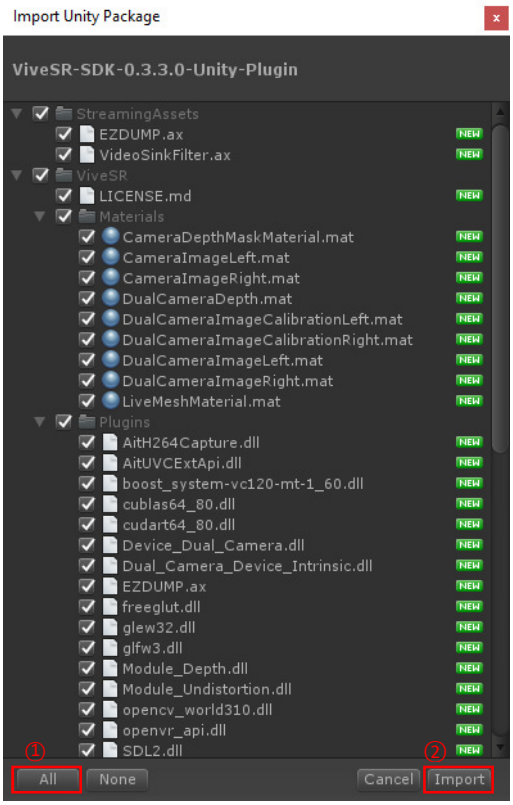
SRWorks Concepts

We provide many kinds of tools for AR/MR development which is easy to use. Therefore, you can focus on your content and save your time.
See more information by **SRWorks SDK Guide-*version*.docx**.

Quick start for SRWorks Unity plugin

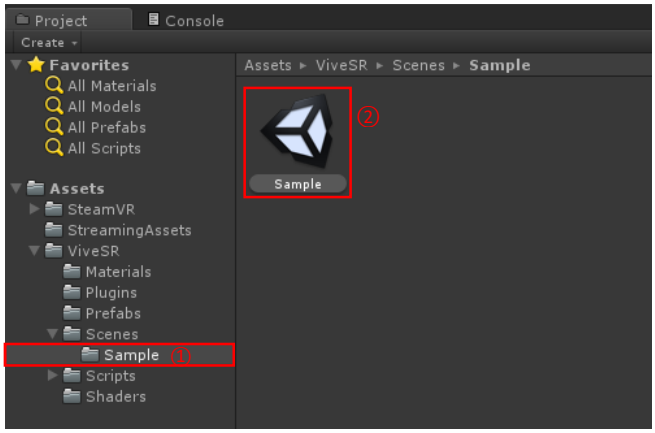
Step1. Complete above environment setting and then launch unity engine

Step2. Import “Vive-SRWorks-*version*-Unity-Plugin.unitypackage”

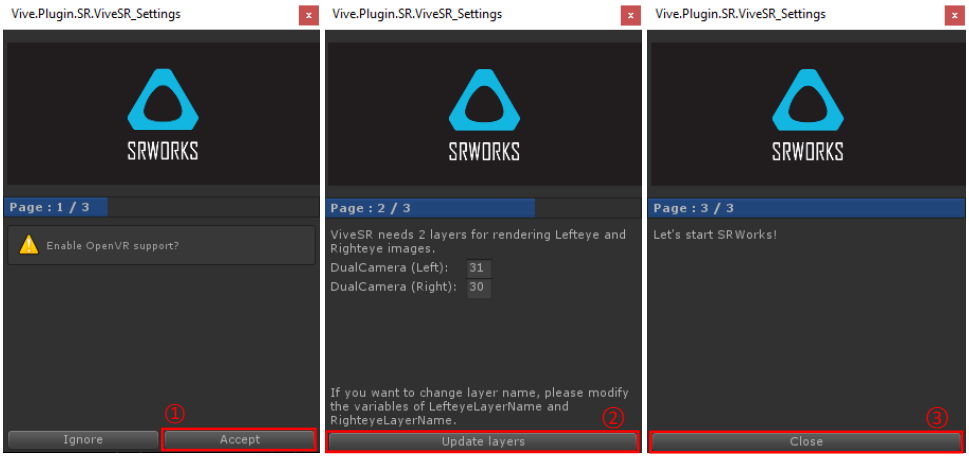


Step3. Restart unity engine to let meta files of dlls be loaded.

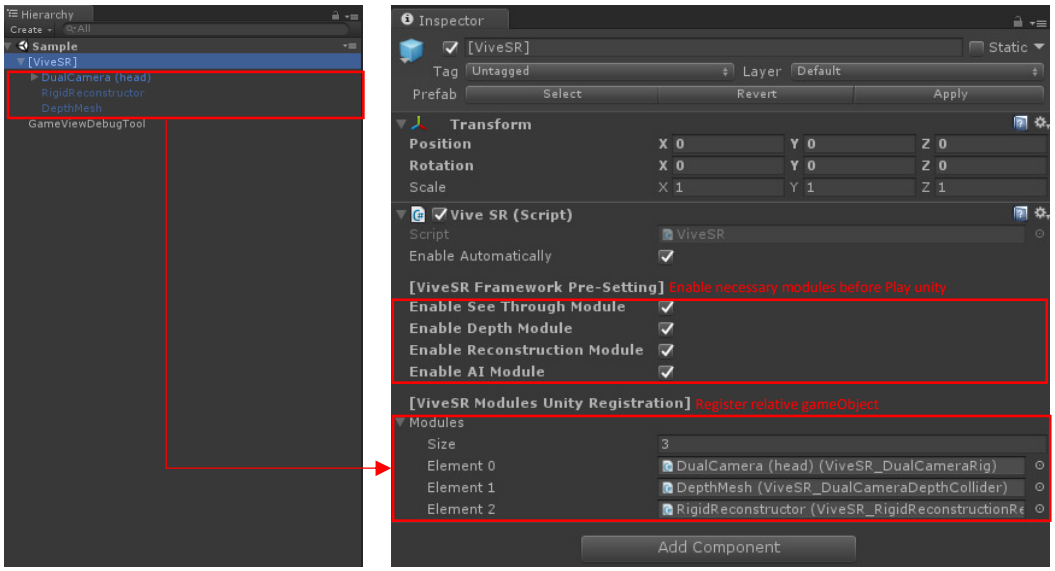
Step4. Open sample scene located in ViveSR\Scenes\Sample



Step5. Accept settings

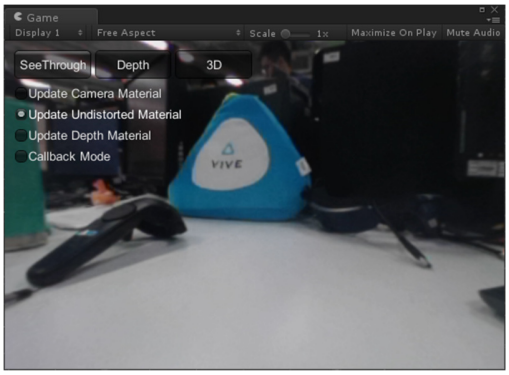


Step6. Check and enable necessary SRWorks modules

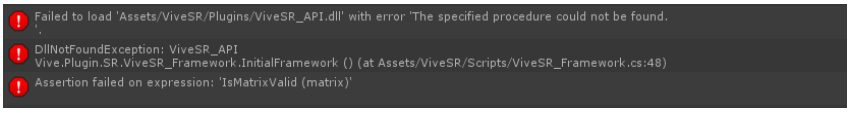


Step7. Play it!

Step8. Launch the GUI by press the key “S” + “R”. There are some general usage whose codes listed ViveSR_GameViewDebugTool.cs.



In case of one of the below errors, please restart your unity editor.

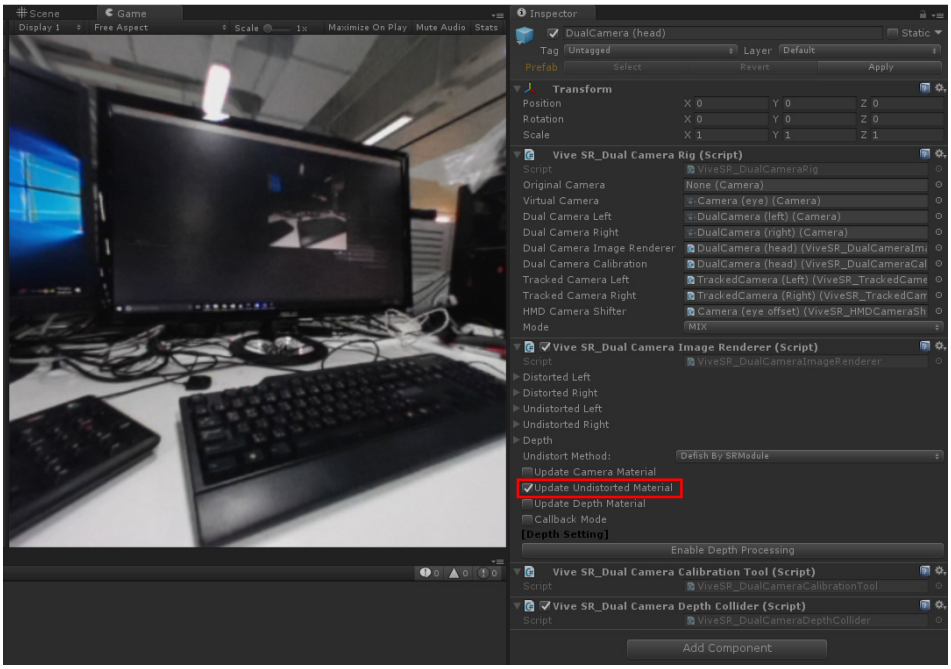


The below error does not affect project, please skip it.

See through

There are three camera work for See-through. One is responsible for rendering left-eye image only, another for rendering right-eye image only, the other camera for rendering all game object except two image planes. So that, please accept the dual camera layer setting to ensure this module works well.

There are some operations listed in ViveSR_DualCameraImageRenderer which demostrated how to use the data after caputuring frames.



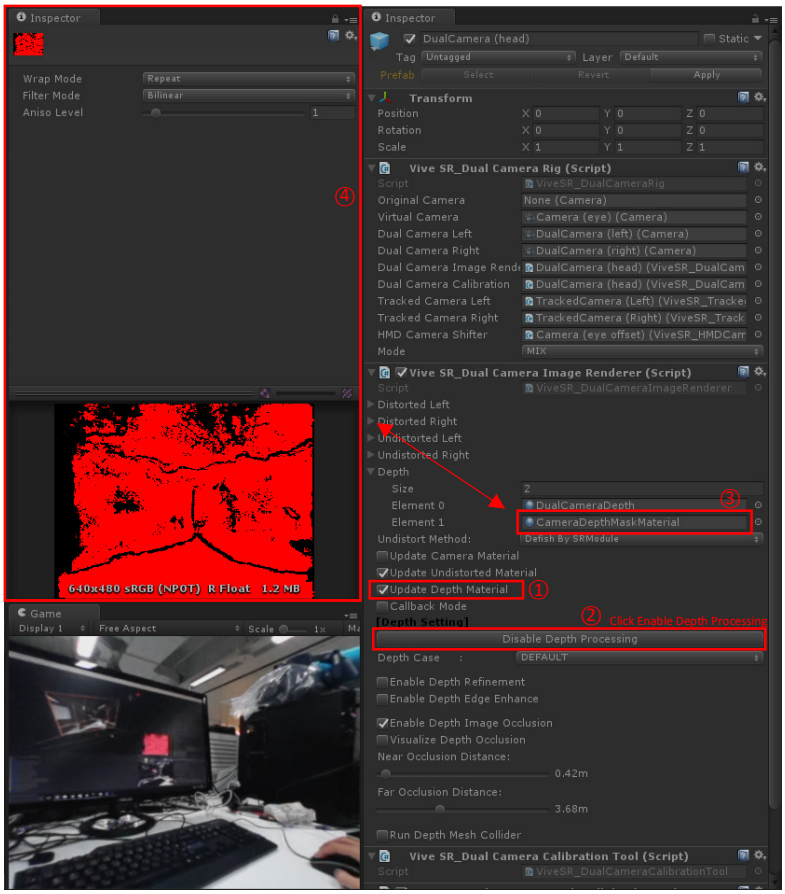
For more information, please see ViveSR_DualCameraImageRenderer, ViveSR_DualCameraImageCapture, ViveSR_DualCameraImagePlane, ViveSR_DualCameraRig

Depth

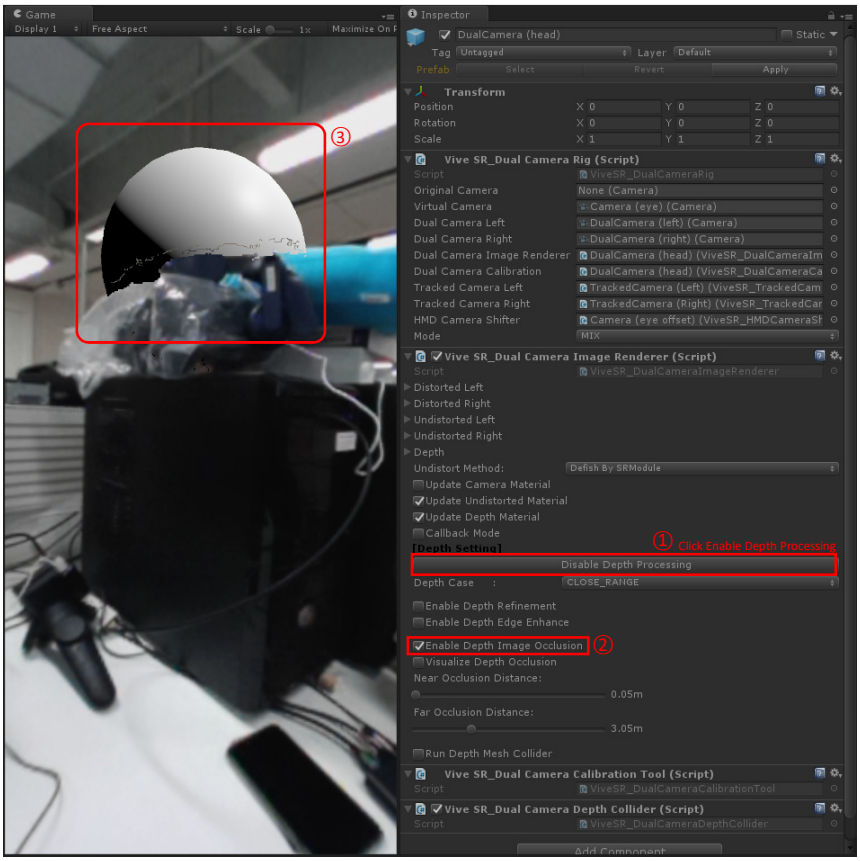
This module provide depth image and related applications.

Update depth image:

After clicking “Enable Depth Processing”, depth operations will appear like the below picture. And this figure demonstrated how to assign a material to receive depth image.

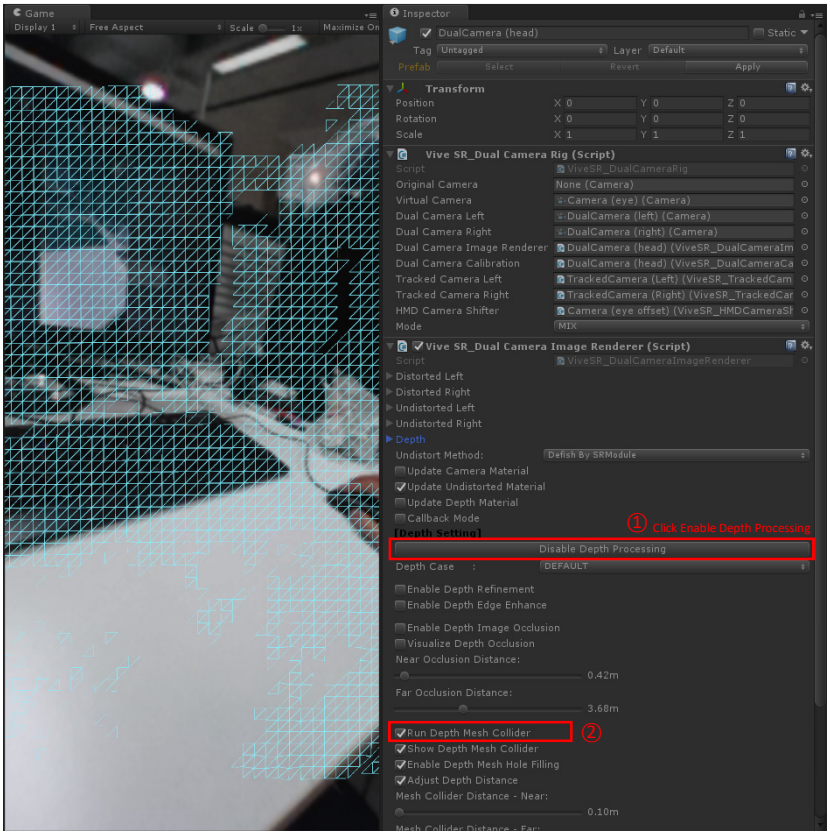


Use depth image to occlude virtual objects:



Use depth image to generate colliders of real world scene:

Toggle “Run Depth Mesh Collider” to experience colliders of real objects in real-time. Furthermore, there is a “Depth Case” able to get more perfect collider of hands.

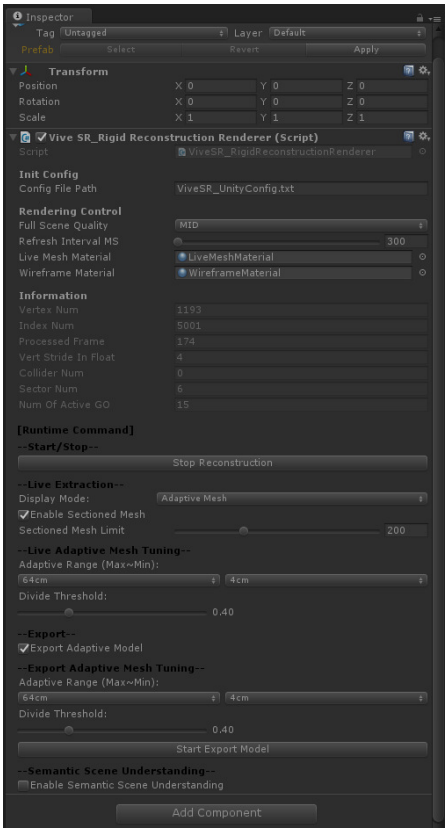


For more information, please see ViveSR_DualCameraDepthCollider, ViveSR_DualCameraDepthExtra, ViveSR_DualCameraImageCapture

3D Reconstruction

This module allows to get geometry information of real world.

Must keep the depth process enable when using 3D reconstruction module. There are some operation listed in the component of ViveSR_RigidReconstructionRenderer.

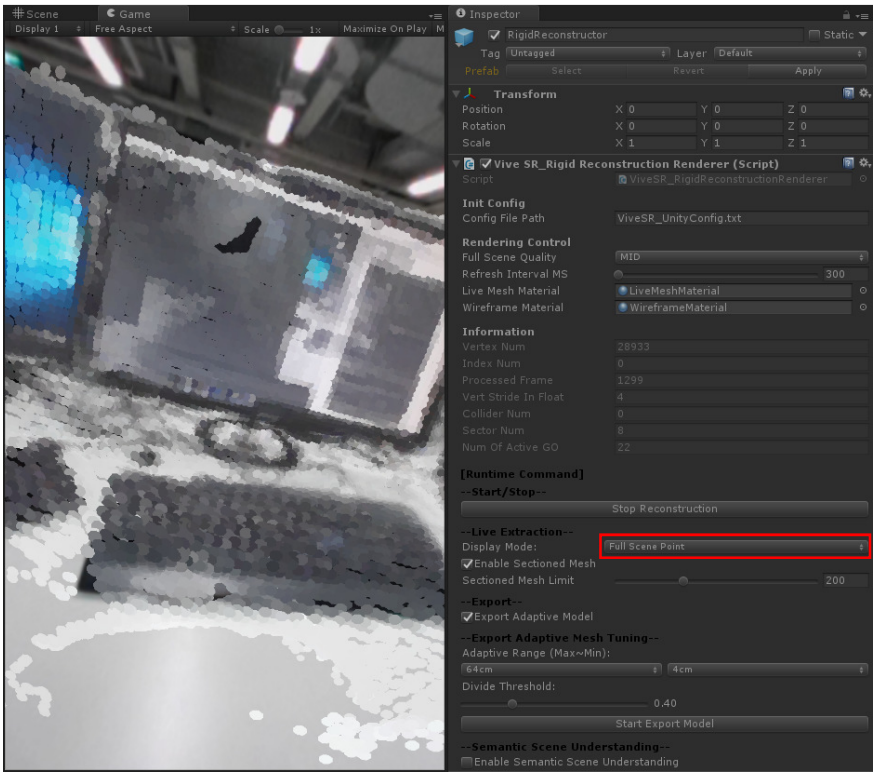


Statistics information (Read-only)

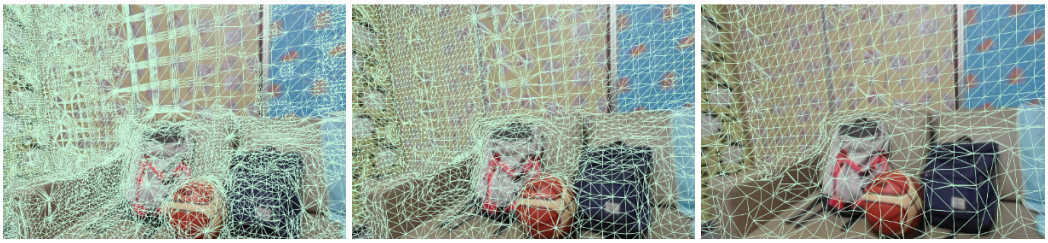
Selectable different display modes

Full Scene Point: full-reconstructed point cloud
Field of View: 3D points in frustum of this frame
Adaptive Mesh: Adaptive triangulation fitting the surface curvature.

Set display mode “Full Screen Point”.



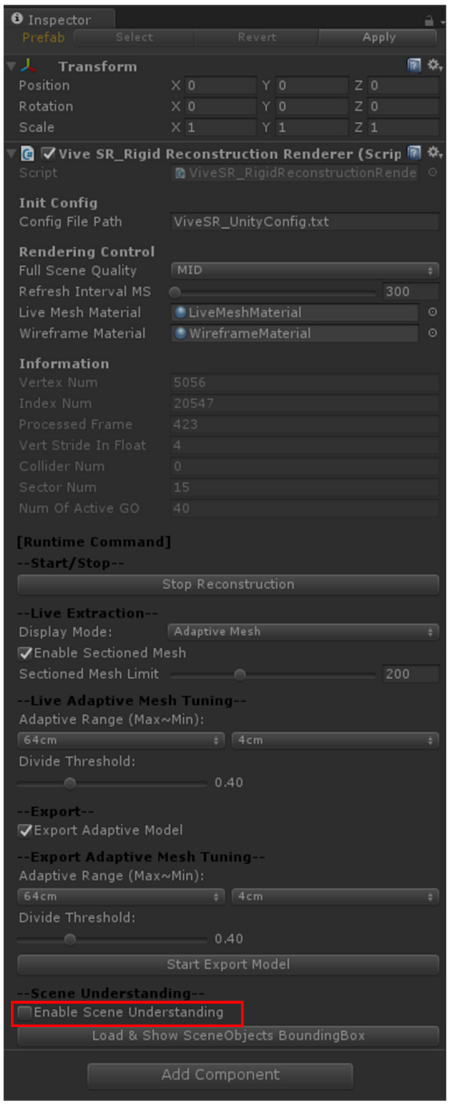
Set display mode “Adaptive Mesh” those three picture showing different qualities.



For more information, please see ViveSR_RigidReconstructionRenderer, ViveSR_RigidReconstruction.

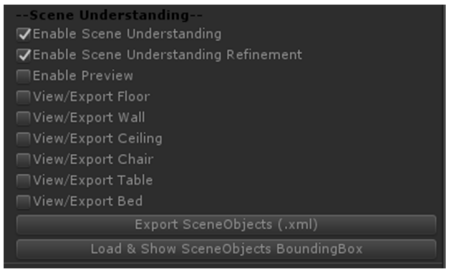
3D Scene Understanding

This module allows to get 3d semantic scene information of real world.



Please press “Start Reconstruction” button

Enable Scene Understanding



If enabled Scene Understanding, inspector would select objects’ type to view/export.

Export scene object (.xml)

Load and show all scene objects’ bounding boxes

NOTE: If you intend to build standalone executable for your project incorporating **AI Vision** module, you need to manually copy the deep learning models under /Assets/ViveSR/Plugins/model to /YOUR_STANDADLONE_EXE/Plugins/model. Still, you can override the path to the model files. Please refer to the included Unity sample script.

Portal

Refer to “SRWorks Unity Portal Guideline” for full descriptions.