1 TARGETING SYSTEM DOCUMENTATION 1.0

1.1 INTRODUCTION AND SALES SPEECH

When I started creating this plugin, I wanted to create an easy to use targeting and user experience enhancement system that is powerful enough for virtual reality devices. I figured out that one of the biggest issues virtual reality faces is lack of content and that it is hard get anything to work. Most of the games are good, but short and quickly played.

1.2 QUICK START.

1.2.1 Installation

Before Downloading the plugin make sure following unity and packages are installed:

-Unity 2020.1.0f1 or newer

If packages are missing from the list here is a guide:

https://medium.com/@jeffreymlynch/where-are-the-missing-preview-packages-in-unity-2020-3ad0935e4193
I think nowadays you can just install Dots editor 0.9 and Unity will handle rest related to DOTS framework. Then just make sure editor coroutines and performance test framework gets installed.

-Burst. Version 1.3.2 - June 17, 2020

-Editor Coroutines 1.0.0

-Jobs. Version 0.4.0-preview.18 - July 22, 2020

-Entities. Version 0.13.0-preview.24 - July 22, 2020

-Mathematics. Version 1.2.1 - August 07, 2020

-Performance testing API. Version 2.0.9-preview - March 24, 2020

-Hybrid renderer. Version 0.7.0-preview.24 - July 22, 2020

-Dots editor. Version 0.9.0-preview.1 - July 27, 2020

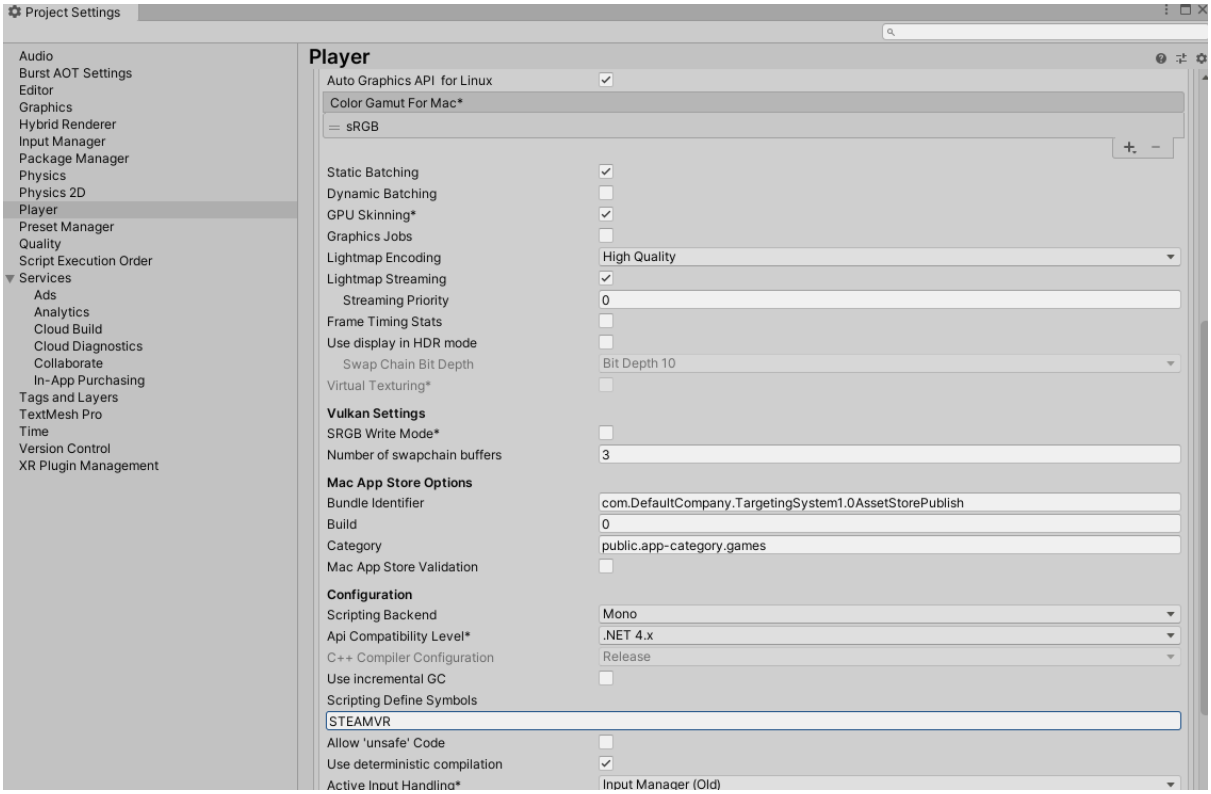
-Collections. Version 0.11.0-preview.17 - July 22, 2020

After the packages are installed download the plugin and make sure it is on the Plugins folder under the Assets folder.

Assets/Plugins/GeometricVision

Virtual reality devices

To get the virtual reality working you need the steam vr plugin that should work with oculus too and add the key word STEAMVR into Player settings. Look for Scripting define assemblies as in the following image.

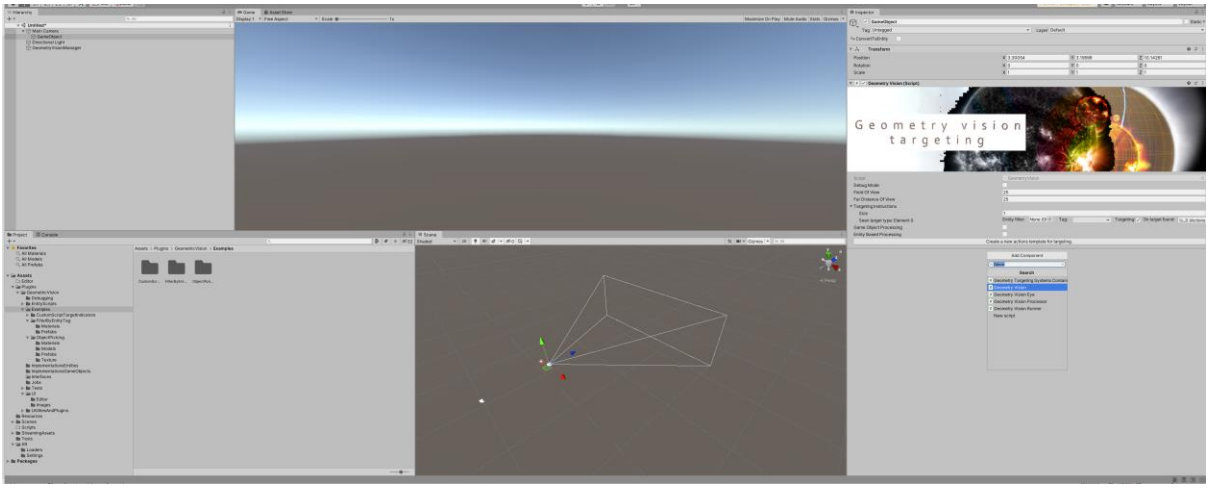


1.2.2

If you haven't installed steam vr it will complain about missing references to Valve. So in case you haven't installed that you'll need Steam vr package from assetstore.
https://assetstore.unity.com/packages/tools/integration/steamvr-plugin-32647

1.2.3 Adding the targeting plugin on a scene and using it

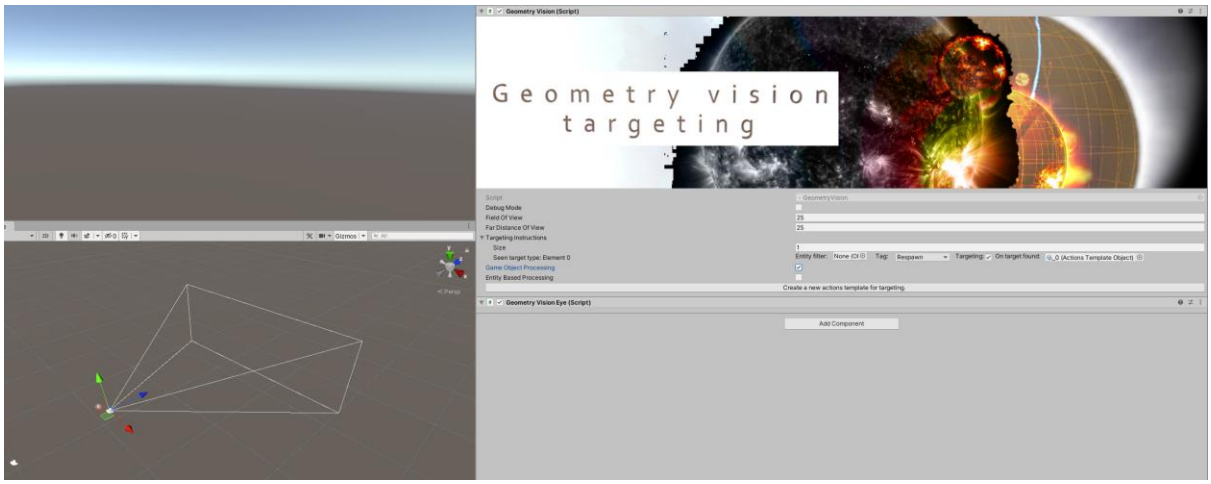
In Unity inspector AddComponent -> GeometricVision. This will handle setting all the other components, so you should ignore using the other components. See the example projects inside the GeometricVision Plugins folder under Examples for using the Geometric vision for various purposes.



If you are adding the targeting system to the camera then you should create an empty gameobject and add GeometricVision component to that instead. After that add that game object as a child for the camera. Plugin has an inspector override to hide camera component of the game object it is added to. So, in case you want to see your camera do as recommended.

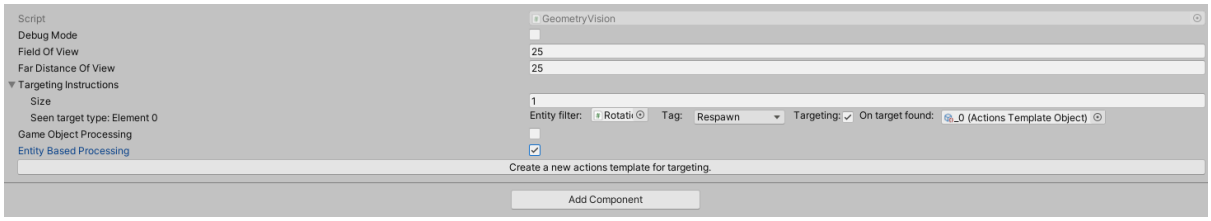
1.2.4 Making targeting works with game objects.

Tick game object processing toggle and it is also recommended to use tag filtering. See the following image for example.



1.2.5 Making targeting work with entities.

Tick entities-based processing toggle and it is also recommended to use entity filtering. See the following image for example.



With the entities it is important to understand how it works. Just adding a script does not work. It needs to be in the format as in the following image.

```
using System;
using Unity.Entities;

// ReSharper disable once InconsistentNaming
namespace Plugins.GeometricVision.EntityScripts.FromUnity
{
   [Serializable]
   public struct RotationSpeed_SpawnAndRemove : IComponentData
   {
      public float RadiansPerSecond;
   }
}
```

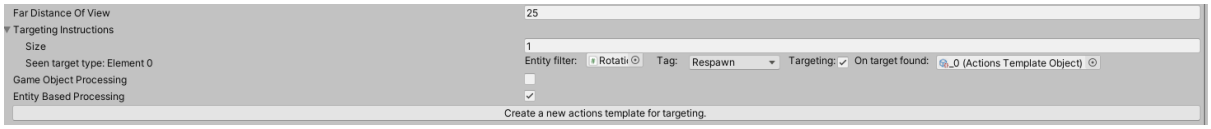
Targeting system get the type of the entity from namespace and the name of the script. So, these needs to be available for entity filtering to work. See the example project included with the plugin.

Make sure the script contains:

1. Valid namespace declaration.
2. is a struct and implements IComponentData

1.3 ACTIONS TEMPLATE OBJECT.

Action template object is used to spawn prefabs that can be used with the system to achieve various effects. It is recommended to create your own by clicking the button “Create new actions template for targeting”.



This will create a scriptable object that can be dragged to the slot inside targeting instruction in the inspector UI.

When clicking the object, you'll see various parameters to configure the template. It is recommended to look for more help on the example projects that use this feature.

Here is a quick overlook on the parameters.

- Delay is used to delay the spawn of the object.
- Duration is used to define how long the action object is alive on the world.

By default, the targeting system does trigger the actions template. You will need to call *GetComponent<GeometricVision>().TriggerTargetingActions();* from your code to get the actions triggered.

```
if (Vector3.Distance(this.transform.position, target.projectedTargetPosition) < maxDistance
   && Vector3.Distance(target.projectedTargetPosition, target.position) < radius)
{
   geoVision.TriggerTargetingActions();
   geoVision.MoveClosestTarget(transform.position, pickingSpeed);
   //Destroy target at 50cm(1.64041995 feet) close to the picker
   StartCoroutine(geoVision.DestroyTargetAtDistance(target, 0.5f));
}
```

See example project for object picking on creative ways to utilise the system.

Prefabs that are spawned can be anything and contain scripts.

Example use case could be a weapon that has a starting effect like smoke from the gun barrel when shooting.

Mid or main action that is the bullet that shoots itself to the target and finally end effect that is explosion.

1.4 CONTACT

-mikael.korpinen@gmail.com Use Targeting system 1.0 "your issue" as subject, if possible.

-Discord channel is the best place to get fast help, because usually there are other helpful people out there. Join link. https://discord.gg/QtHTQ4J