HTC Vive SRanipal SDK Guide

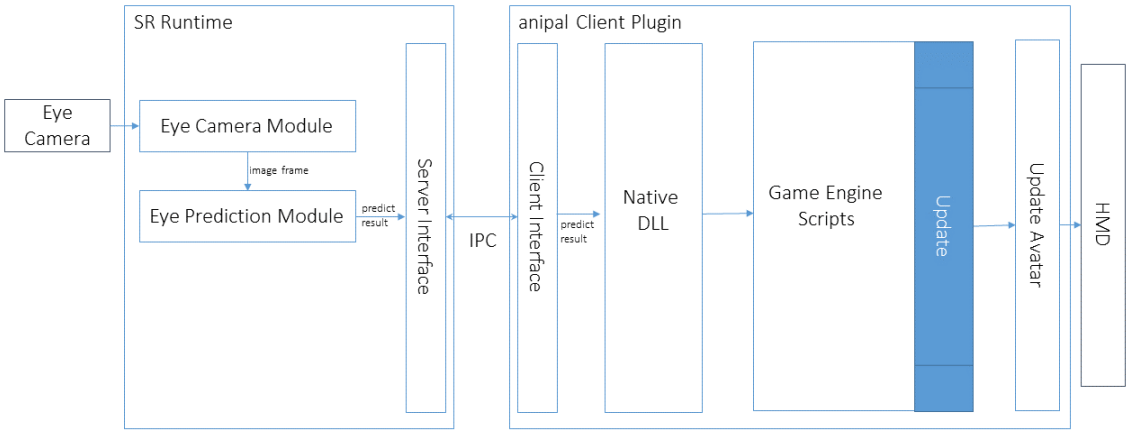
Release version: 1.3.3.0

Table of Contents

Table of Contents 3
1. About the Vive SRanipal SDK 4
2. System Requirements 5
3. Limitations 5
4. SDK Folder Structure 6
5. How to Use SR_Runtime 7
5.1 Installing SR_Runtime 7
5.2 SR_Runtime Usage 7
5.3 Build C Sample Code 8
5.4 Build the Unity Plugin 8
6. Eye Calibration 9
7. Known Issues 10
8. Frequently Asked Questions 11
8.1 Calibration Issues 11
8.2 Update Issues 11
8.3 Other Common Issues 11

1. About the Vive SRanipal SDK

The Vive SRanipal SDK has been developed to help software developers create an eye-aware application with actual facial expressions on 3D avatars. “anipal” stands for “animation pal.”



2. System Requirements

To use the Vive SRanipal SDK plugin, you will need the following minimum software and hardware requirements:

Software requirements	• Windows 8.1 or later (64-bit) • Unity 2017.4.17 or later • SteamVR (2018 October 14 release or later) • SR_Runtime 1.3.0.9 or later
Hardware requirements	• Vive HMD with Eye capability

3. Limitations

- Support Windows 64-bit only

4. SDK Folder Structure

SRanipal_version\

- SRanipal_SDK_Guide.pdf
- 01_C\
  - Document\Document_C.lnk (C API reference)
  - SRanipal\
    - SRanipal_Sample\
    - SRanipal_Sample.sln
- 02_Unity\
  - Document\
    - Getting Started with SRanipal in Unity.pdf
    - Document_Unity.lnk (SRanipal Unity API reference)
  - FaceGym\
    - FaceGym.exe
  - Vive-SRanipal-Unity-Plugin.unitypackage
- 03_Unreal\
  - Document\
    - Getting Started with SRanipal in Unreal.pdf
    - Document_Unreal.lnk (SRanipal Unreal API reference)
  - Vive-SRanipal-Unreal-Plugin.zip

5. How to Use SR_Runtime

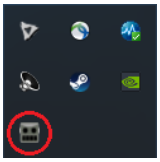
5.1 Installing SR_Runtime

To enable eye tracking capability, you must download the SR_Runtime installer from this link. Follow the instructions to install SR_Runtime.

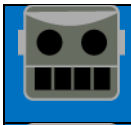
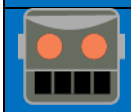
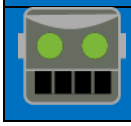
5.2 SR_Runtime Usage

After installing SR_Runtime, follow the steps below to start.

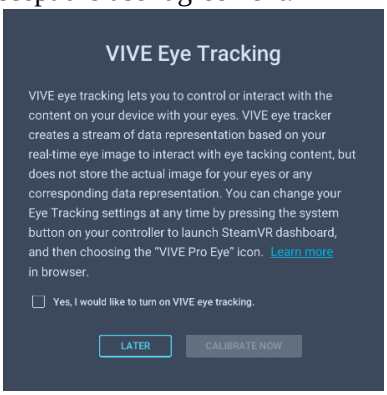
1. Ensure that your Vive Pro Eye HMD is connected to your PC.
2. Launch SR_Runtime and wait until the SRanipal status icon appears in the notification tray — see the image below.

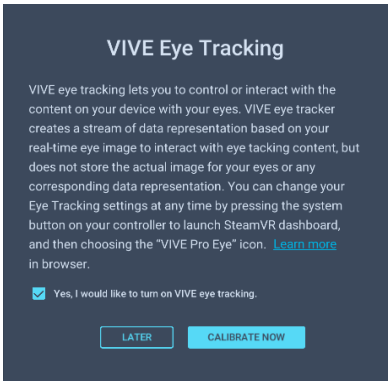


The status icon reflects the status of your tracking devices:

	SR runtime is launched but HMD does not support eye tracking or eye tracking has been disabled by the user.
	The eye tracking device is in idle mode.
	Eye tracking is active; i.e., a program is retrieving data from it.

3. Start **SteamVR** (If not running already)
4. Put on your HMD.
5. Read and accept the user agreement.





6. Start eye calibration (See more details in the next section)

7. You are done! You are ready to develop or use eye-aware applications
8. If you want to quit SR_Runtime.exe, right-click on the status icon and click **Quit** to stop SR_Runtime.

5.3 Build C Sample Code

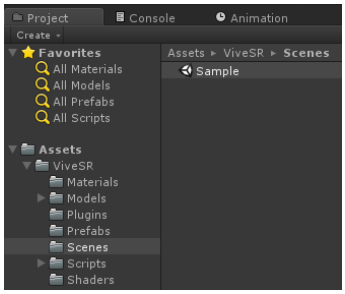
1. Open the solution file of the sample code at *$(SRANIPAL)\01_C\SRanipal\SRanipal_Sample.sln* with Visual Studio 2015.
2. For details about this API, refer to *$(SRANIPAL)\01_\C\Documnet_C.lnk*.

5.4 Build the Unity Plugin

1. Open unity and create a new **3D** project.
2. Go to **Asset** > **Import Package** > **Custom Package**.
3. Select the Vive-SRanipal-Unity-Plugin.unitypackage
4. In the **Importing Package** dialog, ensure that all package options are selected and click on **Import**.
5. Accept any API upgrades if prompted.

- Opening a sample scene

1. In the Unity Project window, find the scene file Sample.unity in **Asset** > **ViveSR** > **Scenes**.

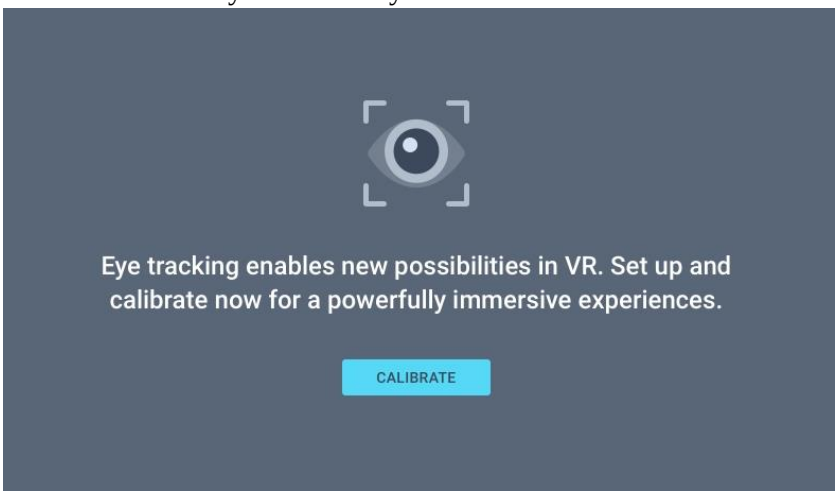


2. Ensure that all Requirements are met and then click **Play**.
3. For details about this sample, please refer to *$(SRANIPAL)\02_Unity\Plugin\Getting Started with SRanipal in Unity.pdf*.
4. For details about this API, please refer to *$(SRANIPAL)\02_Unity\Document_Unity.lnk*.

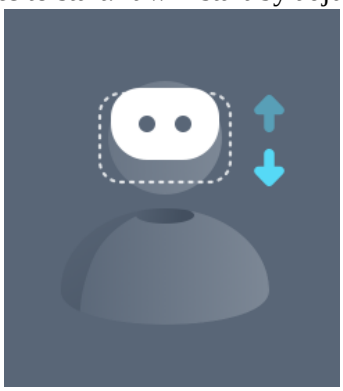
6. Eye Calibration

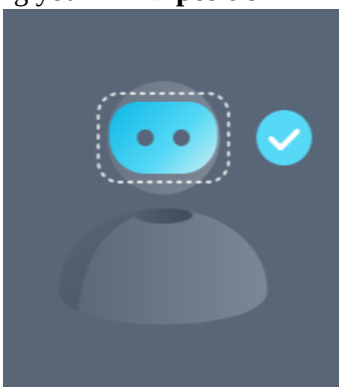
To calibrate for the eye-tracking feature of SRanipal, please follow the process below. Note that for the highest level of precision, it is recommended to recalibrate for different users, as the eye positions and the pupillary distances are different for each individual.

1. To start eye calibration, press your VIVE controller's **system button** and the calibration program will show an overlay window on your HMD.

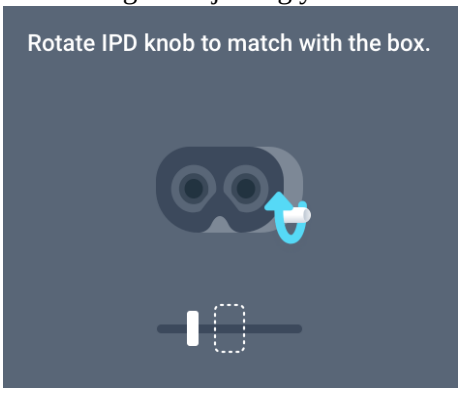


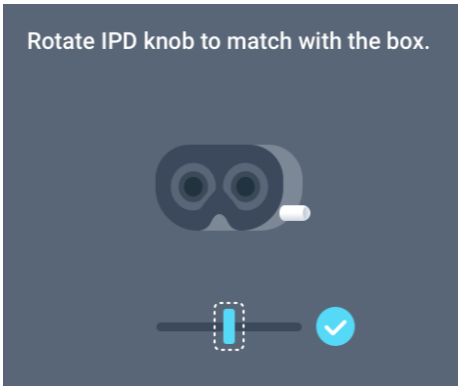
2. If you canno't find it in your overlay window, launch SR_Runtime to open it.
3. Press **Calibrate** to start. It will start by adjusting your **HMD position**



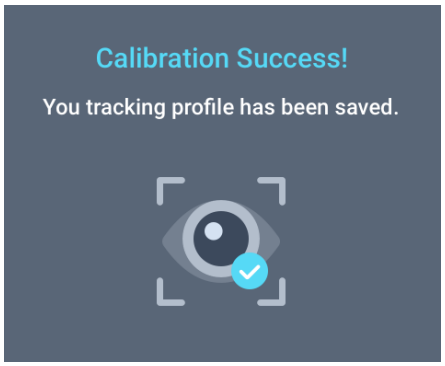


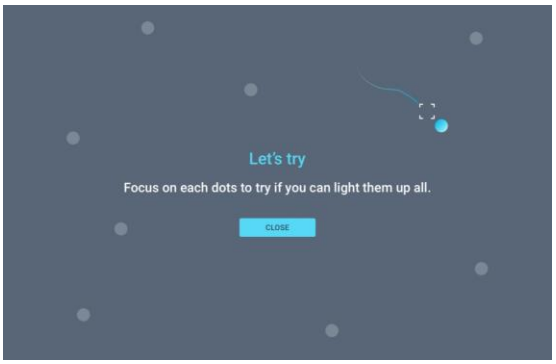
4. The second stage is adjusting your **IPD value**, as shown below.





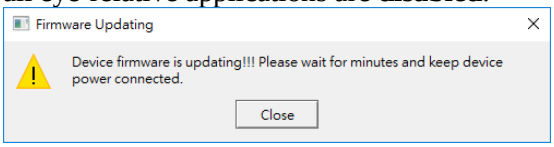
5. After that, you will be guided to do gaze calibration. **Please look at the blue-dot** sequentially shown at the center, right, left, upper and lower of panel until the calibration has been successful.
6. The program will close automatically.
7. You are done! You are ready to develop eye-aware applications.
8. Now you can have a try at this or press your VIVE controller's **system button** to quit eye calibration.



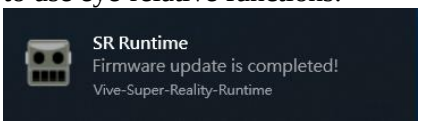


7. Known Issues

- If your HMD requires a firmware update, the window below will pop up. During the process, all eye-relative applications are **disabled**.



After the firmware update, the notification below will show up. Reboot the SR_Runtime.exe to use eye-relative functions.



8. Frequently Asked Questions

8.1 Calibration Issues

- ***How to do eye calibration?***
  - Please check **Section 6: Eye Calibration** and follow the instructions.

- ***Can calibration be done while the framework and an application that needs eye related data are running?***
  - Yes, calibration can be done when SR_Runtime is up and running.

8.2 Update Issues

- ***How to update device firmware?***
  - SR_Runtime automatically checks/updates device firmware.
- ***How to update SR_Runtime?***
  - SR_Runtime automatically checks/updates new versions from the HTC server.

8.3 Other Common Issues

- ***Why is my eye tracking is not working?***
  - Check if the installation steps listed in **Section 5** have all successfully finished.
  - Check if SR_Runtime is running.
  - Check if the HMD is turned on and connected to the PC.
  - Make sure you accepted the user agreement and that the eye tracking feature has not been disabled.

- ***Why I can't see my eye camera version?***
  - If the device firmware upgrade process is interrupted (etc. if you plug out HMD or turn off HMD during firmware upgrade), the information might be missing. You may need to reboot your HMD and follow the instructions in Section 7. (Known Issues)

- ***Do I need to calibrate for different users?***
  - Since every individual has a different IPD setting, it is recommended to do eye calibration for each user to get the highest level of eye tracking precision.