MAT - transLAB-OptiTrack

Attached is the patches for the optitrack system in the transLAB and the details of getting up and running.

There are 3 folders in the downloaded "transLAB-OptiTrack folder", each containing files pertaining to their respective program.
-Max
-Motive
-Unity

Max:
(Within the Max Folder)

- Place the *vrpn.tracker.mxo* and *quat2euler.mxo* in:
~/Applications/Max/Cycling '74/max-externals

- Place the *vrpn.tracker.maxhelp* in:
~/Applications/Max/Cycling '74/max-help

- Start Max

Motive:
(Within the Motive Folder)

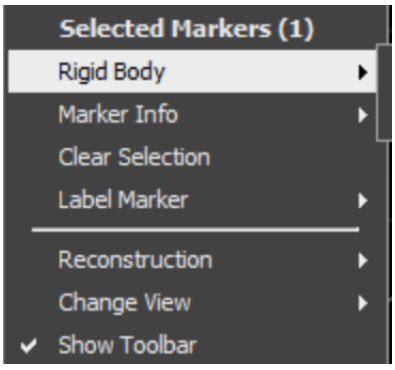
- Open Motive

- Load the Calibration file: CalibrationResult 2016-11-17.cal

- Place a rigid body in the tracked space *(this should be a unique and non-equilateral triangle)*

- Select the 3 points with mouse

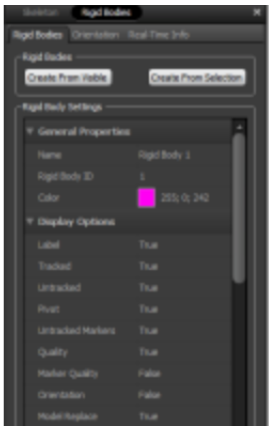
- Right click and select rigid body (2nd one down in menu)



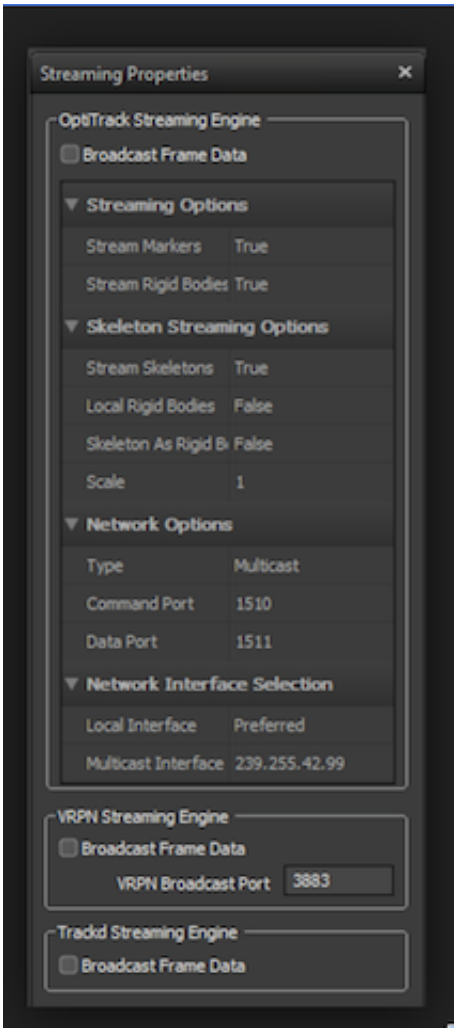
- Select "*create from selected markers*"

- Click on the *Rigid Body Properties* (triangle constellation icon in top left of interface)

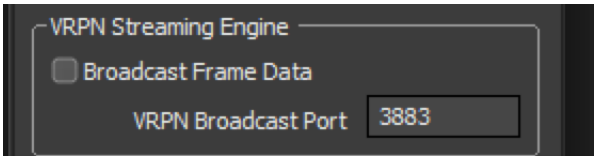
-Rename Rigid Body to desired name



-Click on *Data Streaming Pane* (list with small arrow icon in top left of interface)



-Select box of the VRPN Streaming Engine with port number 3883



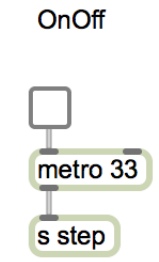
Wireless:
- Make sure you are connected to the Translab wireless on the device you wish to receive the data. Any other wireless network will not work.

Max:
(Within the Max Folder)

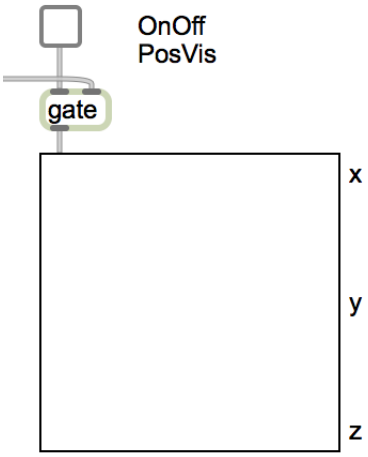
- Open the *TransLAB_optitracker.maxpat* patch

- Rename the vrpn.tracker objects's name to the same name as in *Rigid Body Properties* ***(case sensitive)

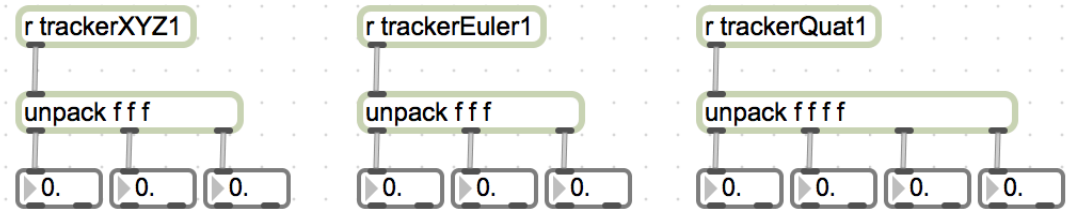
- Toggle the *"Metro*" **on**



- Toggle the graph for each data stream that you would like to see (*XYZ, Quat, Euler)*



- There is *"send"* objects for each data stream for you to place into your patch, Use this to send the data to other patchers.
" r trackerXYZ1" - "r trackerQuat1" - "r trackerEuler1"



***Notes:**

- Make sure that you are on the "*TranLAB"* wireless and that your rigid body is named *identically* in the patch as in the Motive software in order to receive the streamed data.

- If you wish to add additional trackers repeat all the steps and be sure to rename the trackers with a different name (l-hand // r-hand ll tracker1 \\ tracker2... etc). Then copy and rename the “vrpn.tracker” object and the parts you wish to include. Finally, rename the send objects… (for example: Tracker #1 = *“s trackerXYZ1”* & “*r trackerXYZ1”* // Tracker #2 = *“s trackerXYZ2” & "r trackerXYZ2”)*

- If the Tracking computer is off or needs to be restarted remember to unplug the 3 camera USB cables from the back of the tracking computer, then start the computer. Once the computer has booted plug the 3 USB camera cab els back in to the back of the Tracking machine.

- Remember to shut everything down (except for the computer) once finished.

There is folder named "*OtherHelpfulPatches"* which has additional patches worth exploring. These include recording / payback tracker data, simulation patches and fake tracker data patches when you are not using the Optitrack but need to simulate tracker data.

Unity:
(Within the Unity Folder)
There is files that will help using VRPN from Motive in Unity

In motive:
Launch the MotiveProject-UnityExample.ttp

Online:
Source Code / Library for Unity VRPN:
Go to Git Hub:
Laremere / Unity VRPN:
https://github.com/Laremere/unityVRPN
Install the 64 bit version
https://github.com/arviceblot/unityVRPN/releases

In Unity:
-Unity OptiTrack Integration (VRPN):
Motive Unity Demo Folder (which has the Unity scene with all the gameobjects set up already for Motive’s vrp n data streaming as well as steamVR + VRTK. Just need to change the ip address and it will work)

-Downloaded source code
Find Folder named “UnityVRPN”

-Select the following four folders:
Editor
Plugins
Scenes
Scripts

-Then import the four folders into your unity project as assets

In Unity:

Go to scenes, launch “Demo” (this demo doesn’t have steamVR, simply for VRPN data streaming)
then you can get several key objects.

-Tracked Objects.
Note: Change “Object name” to match motives.
Example name : Rigid body

-Tracked Host Settings:
Note: Chang “host name” to server address.
example: 192.168.1.100 (IP address of the machine running Motive)

-Hit Run

Tracked Object - This is the object that moves with the position data from OptiTrack. You can attach the same script “TrackerSettings.cs” to any object you want to move with the data.
Tracker host settings - invisible run communicator
Event Systems - invisible run communicator.

Additional notes:
Unity OptiTrack Integration:
https://docs.google.com/document/d/1QhzLTFBqMgep4UEtzuKhrdKWLyUlF4i74j2ZgQvUpEk/edit?usp=sharing

Replacing Unity camera with ViveCamera:
https://docs.google.com/document/d/1kg6YARlpn69IKP79iVzylp5FZdlFvX8Uo_S9G-9gglE/edit?usp=sharing