



FOLLOW-ME
TRACKING SOLUTIONS

Follow-Me 3D - v0.6.496a

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Introduction and preparation

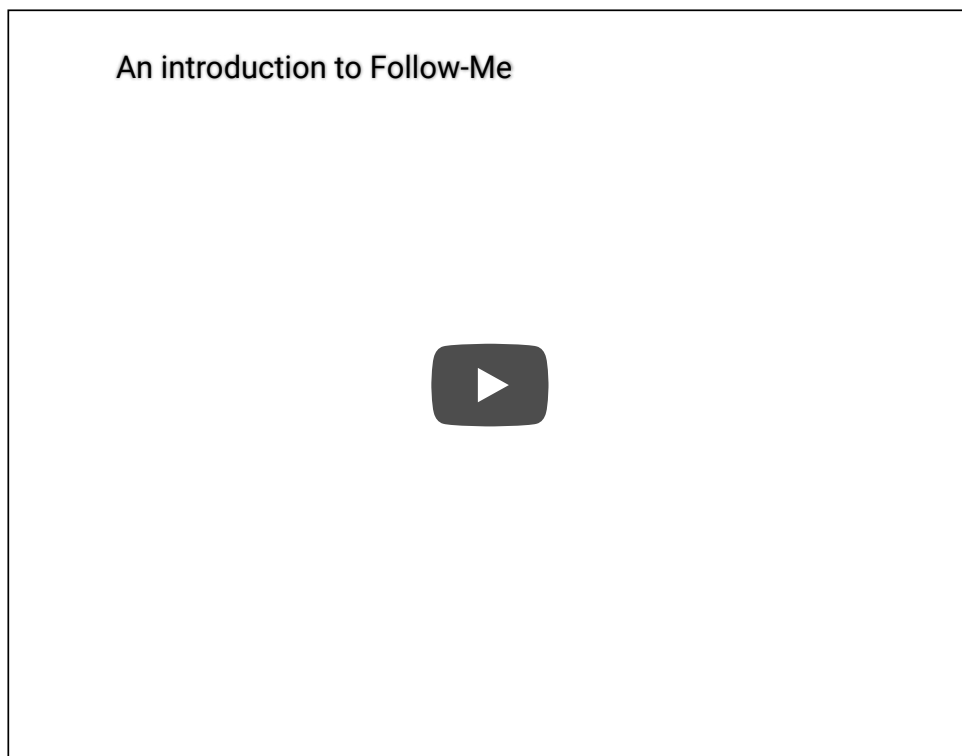
System introduction

System introduction and hardware

Follow-me is a performer tracking system. Each performer (or: *target*) can be tracked using an unlimited amount of fixtures from any manufacturer in any orientation. Performers can be tracked manually using the Follow-Me mouse consoles, or with tags using our autotracking system.

Via a control channel Follow-Me allows full fixture control to be returned to the lighting console. All fixtures patched in Follow-Me can be assigned to any target. The system is calibrated by measuring a number of X/Y/Z calibration points on the stage, as well as the X/Y/Z positions of all fixtures.

Watch the video below to get a more in-depth introduction to the Follow-Me software.



Typical system setup

We provide Follow-Me systems in complete packages based on the amount of performers you wish to follow and the amount of fixtures you want to use for this. We have a tool for this which can be found [here](#).

The Follow-Me system is sold with or without Follow-Me Rack Server. The Follow-Me Rack Server makes the system a clean and compact tracking solution, but in order to save costs you can also purchase the system without the rack server.

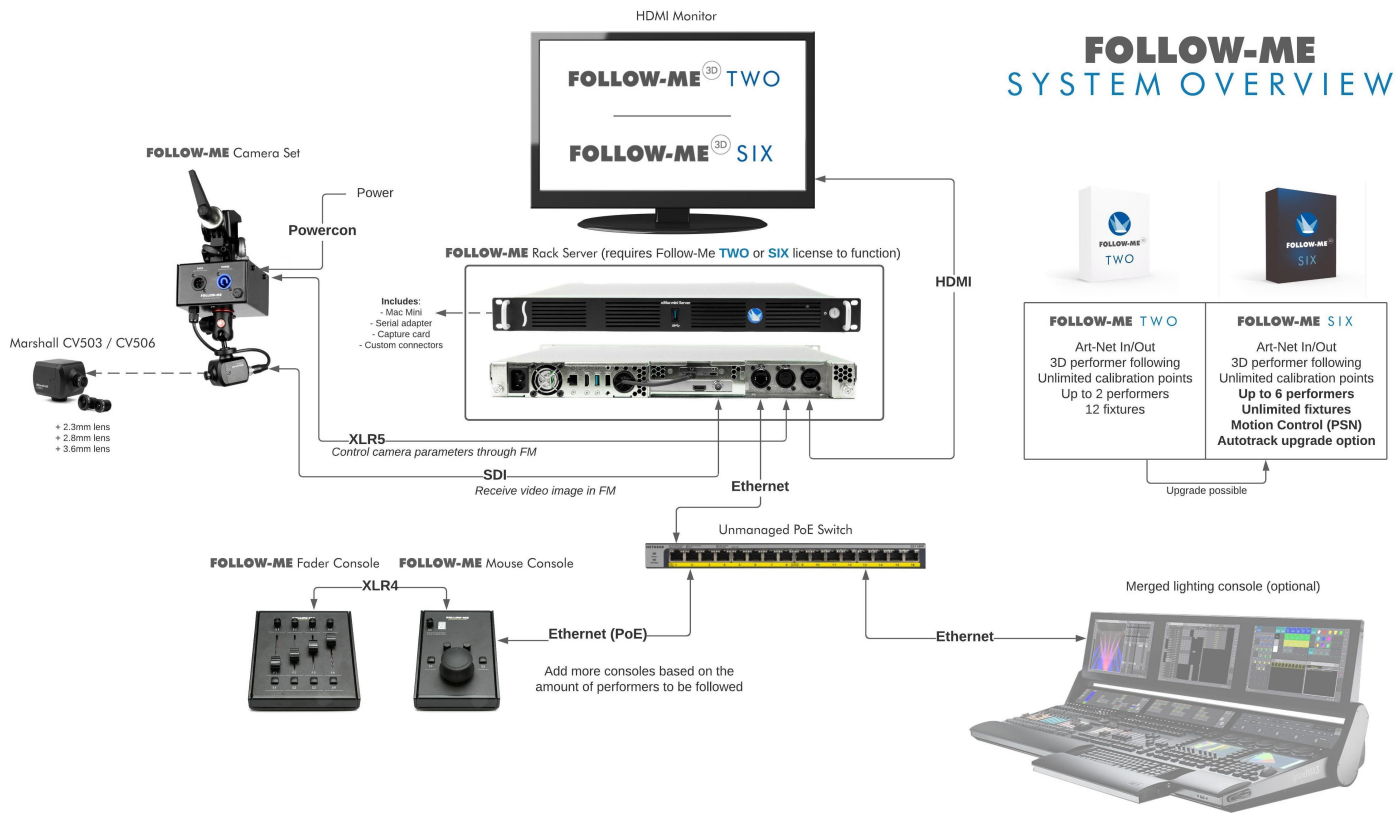
Follow-Me system with Rack Server

The Follow-Me system with Rack Server includes the following:

- Follow-Me Rack Server
- Follow-Me Camera Set (Including Marshall CV503 / CV506 Camera)
- Follow-Me Mouse Console (1 per performer)
- Follow-Me Fader Console (1 per performer)

Additionally required:

- PoE switch
- Monitor
- Cables



Setting up the hardware

In the video below is shown how to set-up the Follow-Me hardware.

Verify to continue

We detected a high number of errors from your connection. To continue, please confirm that you're a human (and not a spambot).

I'm not a robot reCAPTCHA
Privacy - Terms

Switches

Some switches will **NOT** work correctly with Follow-Me and the Follow-Me consoles. Some of the managed network switches tend to push the port to a 1000 Mbit connection when that is not needed. We always recommend to use the most stupid, unmanaged switches. Also, sometimes it helps to switch from the current network adapter to another and back again. You can change the network adapter in the dropdown menu on the top left corner of the settings screen. Make sure that auto negotiation is turned off in your switch.

Consoles

Below are the technical details for the Follow-Me mouse console, from left to right:

1. XLR 3-pin for LED desk light (max 120mA): you're able to connect a Littelite LED task light to our mouse and fader consoles.
2. Status LEDs, from left to right: Green for Power, Green for Fader console connected, Orange for Network activity, Orange for Network link
3. XLR 4-pin to link to the fader console
4. EtherCon connection for PoE network.



WARNING: Make sure to only connect task lights from Littelite, as using others could break the desk light function of the console.

The Follow-Me Fader console has a Neutrik XLR-4 output to link to the mouse console. An XLR cable is included with the fader console. There is also a Neutrik XLR-3 available for an optional LED desk light. The Follow-Me Fader

Console supports the industry standard [Littlite X-LED Series](#) and [Littlite XR-LED Series](#).

Having a back-up system

You might want to have a second Follow-Me Rack Server as a back-up system for Follow-Me. We provide you with a back-up license that you can use on a second Follow-Me Rack Server. Copy your showfile from your main system to your back-up system. Connect this server to the same network switch as the main server and set it up so it does not start sending artnet at start up. You can do this in the **Setup** tab in Follow-Me. To start sending out from the back-up system, all you'll need to do is press the **start ArtNet** button.

The Follow-Me Mouse and Fader Consoles are network based and are also connected to the network switch. This means they are also being detected by the backup system. Those do not need to be plugged over to the backup machine.

Preparation & installation

Preparation and installation

This section will tell you how to install drivers needed, how to set-up the network and how to install Follow-Me.

Note: Follow-Me Rack Servers come with drivers and software pre-installed, and all settings adjusted for optimal use of Follow-Me. You can skip this page if you have a Follow-Me Rack Server to your disposal.

Installing the drivers

We first need to install the drivers that are needed to successfully run Follow-Me. You'll need to download the 3DConexxion driver and the Blackmagic driver. Follow the following steps:

1. Download the driver needed for the BlackMagic Ultrastudio Recorder 3G [here](#), by clicking on the latest version of "Desktop Video" for MacOS.
2. Install the driver by following the steps in the installation wizard.

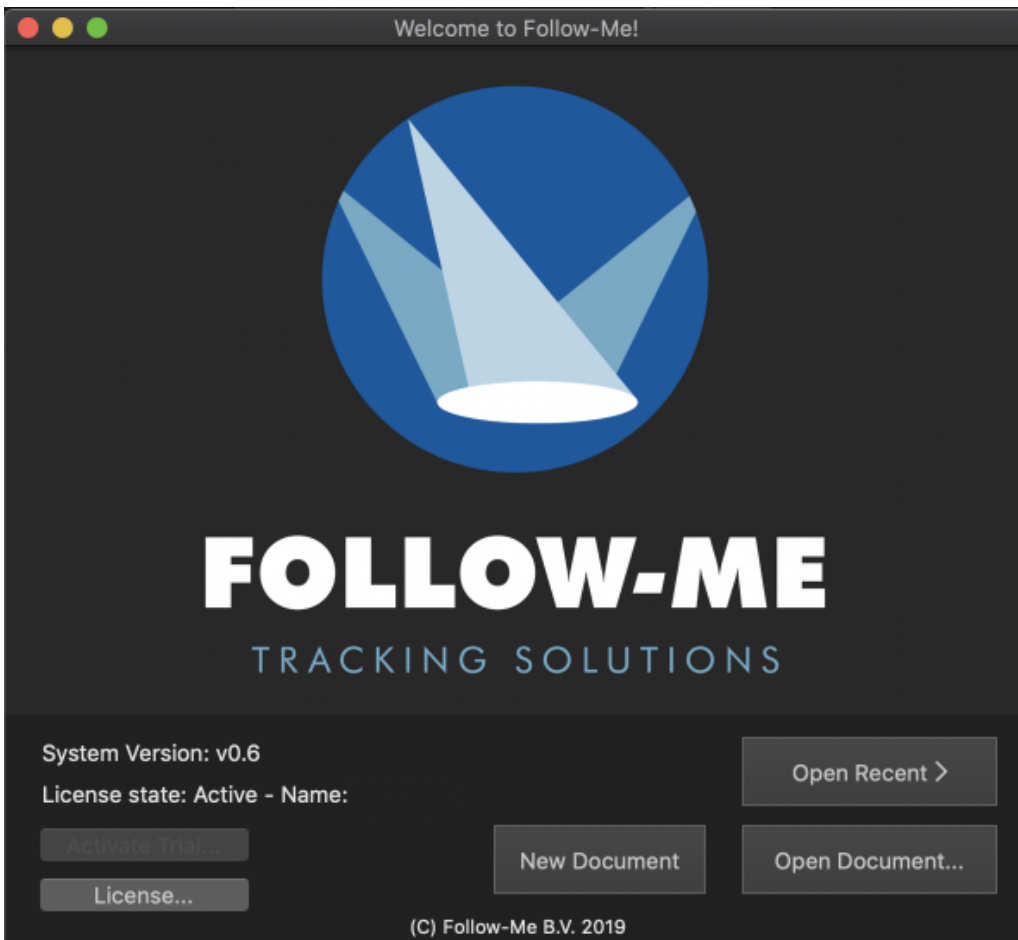
You have now installed the drivers need for Follow-Me to function.

You might need to restart your Mac to complete the installation of the drivers. Also make sure to check your security settings in System Preferences to allow both drivers to run correctly.

Installing Follow-Me

Now, we're going to install Follow-Me. You can download the latest Follow-Me software in My Follow-Me. You should have received an e-mail from the Follow-Me support team that contains a license code for the software. Follow these instructions to install Follow-Me:

1. Save the .zip file to a folder of your choice, like a "Follow-Me" folder on your desktop.
2. Unzip the archive containing the Follow-Me application, and double click the Follow-Me application
3. Click "Yes" when asked to move the app to the application folder.
4. Double click the Follow-Me app to start it - a welcome screen should pop up.

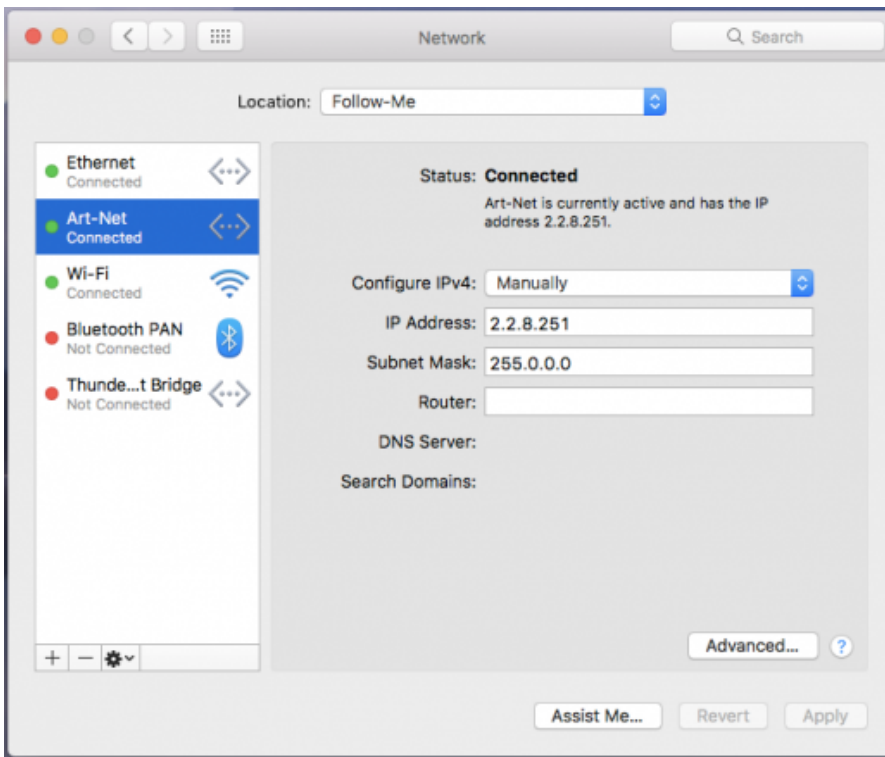


To activate your Follow-Me license, please see the page on [LINKLINKLINK](#)

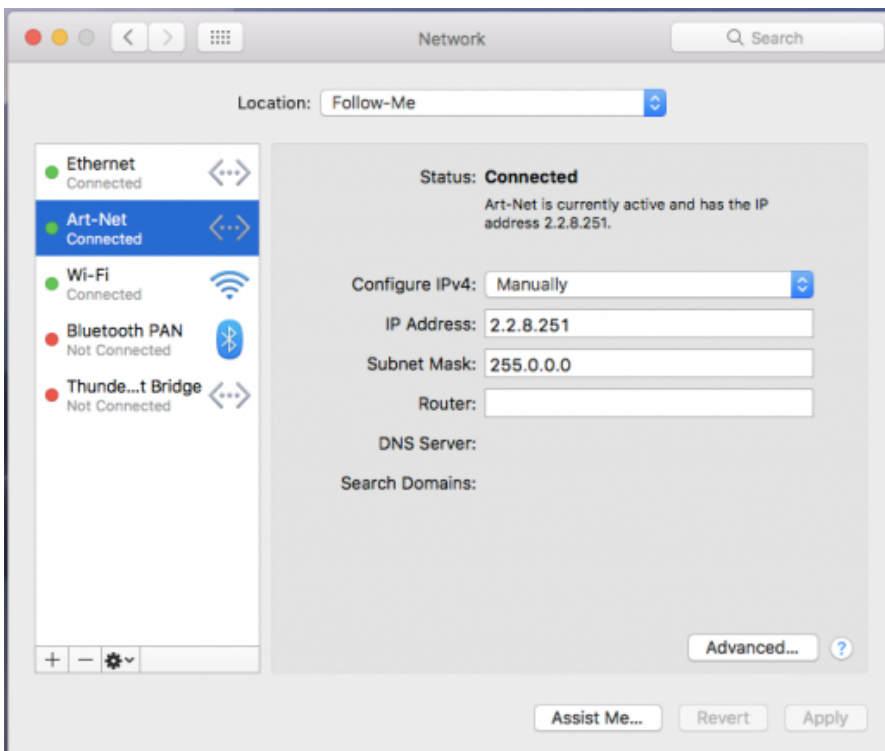
Network set-up

Now we're going to set-up the network for Follow-Me to function correctly. Your Mac should have an IP range and subnet mask that match the network used for the data distribution to the lighting rig and the lighting console. This varies from company to company. Only a cabled (ethernet) network (CAT5 or 6) can be used. WiFi connections won't give satisfying results due to latency in the connection.

1. Go to **System Prefences** → **Network** on your Mac and check that the network connection is active, like "Ethernet" (in the example image renamed to Art-Net).



2. Go to **Location** drop down menu, and press **Edit Locations**.
3. Add a new location by pressing the **+** and rename to “*Follow-Me*”.
4. Press **Done** and select that location.
5. Set the parameters to match the DMX/Art-Net network, probably like:
 - a. Configure IPv4: Manually
 - b. IP address: 2.x.x.x (between 1 & 254)
 - c. Subnet Mask: 255.0.0.0



6. Click on **Apply**, and check for proper result.

You have now successfully set-up the network for Follow-Me.

Show condition system setup

There are a number of programs, processes, and tasks that your Mac runs either periodically or all the time in the background. Many of these things are non-essential for the system to run correctly. Disabling these programs will increase the availability of your computer's resources and will make the Follow-Me system more responsive.

What follows here is a list of the programs or processes which we recommend disabling, and the instructions for doing this. This section presupposes a basic understanding of the Mac OS and at least a passing familiarity with the Terminal.

Entering the commands

The commands, listed on the right side below, should be entered in the Terminal window. You can easily open the Terminal window by pressing **⌘ + spacebar** and entering "*Terminal*".

Disable spotlight

Spotlight periodically updates its index of all files on all attached disks, and this updating can cause the disk to be momentarily unavailable. Disable this with the following command:

```
sudo mdutil -a -i off
```

Disable Display Sleep, Disk Spin down and System Sleep

We want to prevent our Mac from going to sleep during a show. MacOS has independent sleep intervals for the display, the hard disk, and the whole system. To prevent all three kinds of sleeping enter this command:

```
sudo pmset -a displaysleep 0 disksleep 0 sleep 0
```

Disable Screensaver

Likewise, we don't want the screensaver coming up. To prevent that from happening enter this command:

```
defaults -currentHost write com.apple.screensaver idleTime 0
```

Disable Time Machine

Time Machine, much like Spotlight, uses indexing and background processes which can take hold of the disk at inopportune moments. To shut off Time Machine enter this command:

```
sudo tmutil disable
```

Disable Software Update

You don't want your computer trying to update software in the middle of a run, let alone in the middle of a performance. To disable Software Update, enter this command:

```
sudo softwareupdate --schedule off
```

Disable Dashboard

Dashboard uses a lot of CPU time and network access. Also, if accidentally invoked, it takes over the screen of your Mac entirely, which can be surprising and confusing and lead to missed cues. To disable Dashboard entirely, enter this command:

```
defaults write com.apple.dashboard mcx-disabled -boolean YES
```

Restart the Dock

The Dock is in control of several of the system components that we just adjusted. Restarting the Dock allows these changes to take effect. Enter this command in the Terminal window:

```
killall Dock
```

Disable App Nap System Wide in Mac OS X

App Nap works by suspending an app when OS X determines it isn't performing any useful task. This can require some energy, and can thus be disabled using the following command:

```
defaults write NSGlobalDomain NSAppSleepDisabled -bool YES
```

Additional steps

There are still some other steps you can undertake to improve system performance. These are listed below.

Stay off the internet

The best way to guarantee that automatic software updates or any other network traffic won't bother your show is to disconnect the show computer from the Internet. We strongly encourage this. When you use a network to connect your

Follow-Me computer to other hardware, and your show doesn't require Internet access, make sure that network is a closed LAN (local area network) and has no path to the Internet.

Log out of iCloud

Even when your Mac is offline, iCloud is surprisingly assertive about checking in with the iCloud servers. Logging out of iCloud ensures that this check-in process doesn't claim processor power when you need it. Do this in your **System Preferences > iCloud**.

Disable User Login Items

You might also want to disable applications that start when logging in on the Mac. Do this in **System Preferences > User Accounts**.

Disable other software

Perhaps you have more applications running that consume resources, like a firewall or anti virus applications. Have a look at the top right corner of your screen and see if there are applications indicating that they're started and working; close them by hand.

Minimize Internet Accounts

Similarly, any accounts used to sync Mail, Contacts, and Calendars can potentially try to access the Internet and take up processing power while doing so, even while network access is disabled. Do this in your **System Preferences > Internet Accounts**.

Licensing

Licensing

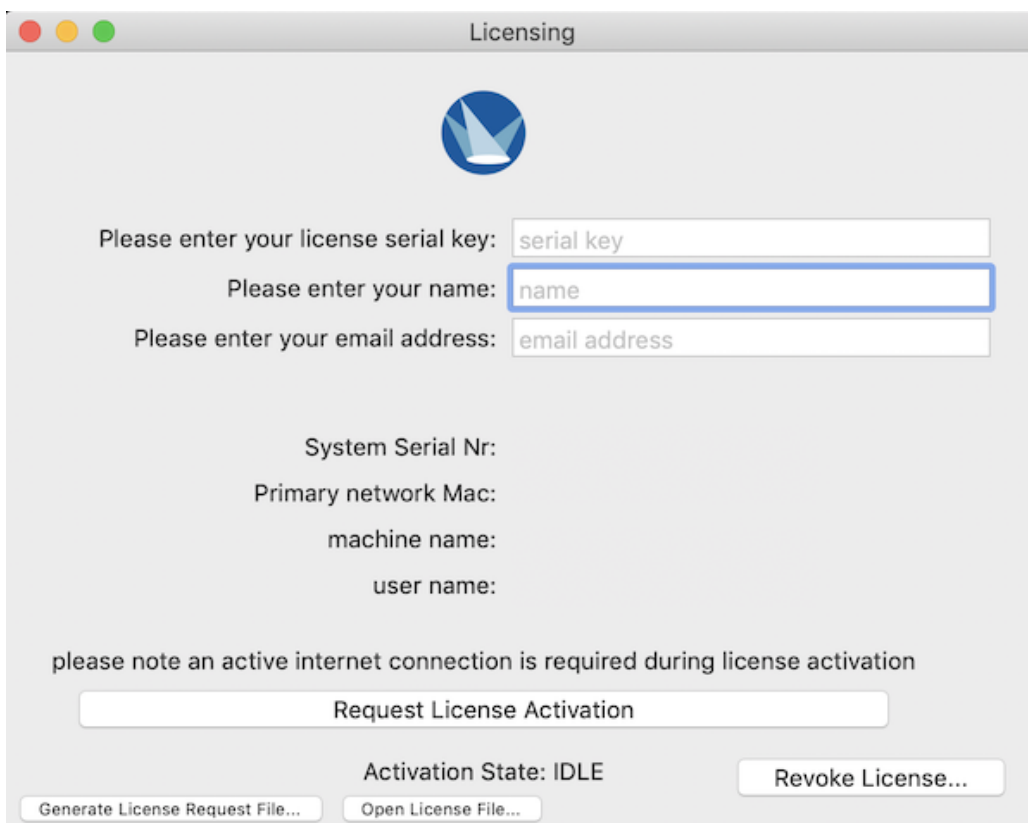
In this section, you'll learn how to activate and revoke a (trial) license.

NOTE: With an unlicensed system, you can still prepare your showfile! Simply create a new document, prepare your fixtures and mesh, and save the showfile.

Activating a license

Open the Follow-Me software to get started, make sure you are on the welcome screen.

1. If you want to activate a full license, press the **License...** button. If you want to activate a trial license, press the **Activate trial...** button. This will open a new window.



The screenshot shows a window titled "Licensing" with a blue icon of a paper airplane. It contains three input fields: "Please enter your license serial key:" with a placeholder "serial key", "Please enter your name:" with a placeholder "name", and "Please enter your email address:" with a placeholder "email address". Below these are labels for "System Serial Nr:", "Primary network Mac:", "machine name:", and "user name:". A note states "please note an active internet connection is required during license activation". At the bottom, there is a "Request License Activation" button, an "Activation State: IDLE" label, and a "Revoke License..." button. At the very bottom, there are two buttons: "Generate License Request File..." and "Open License File...".

2. Enter the license code you have received by e-mail, together with your name and e-mail.
3. Click **Request License Activation**, which should update your activation state to "Active".

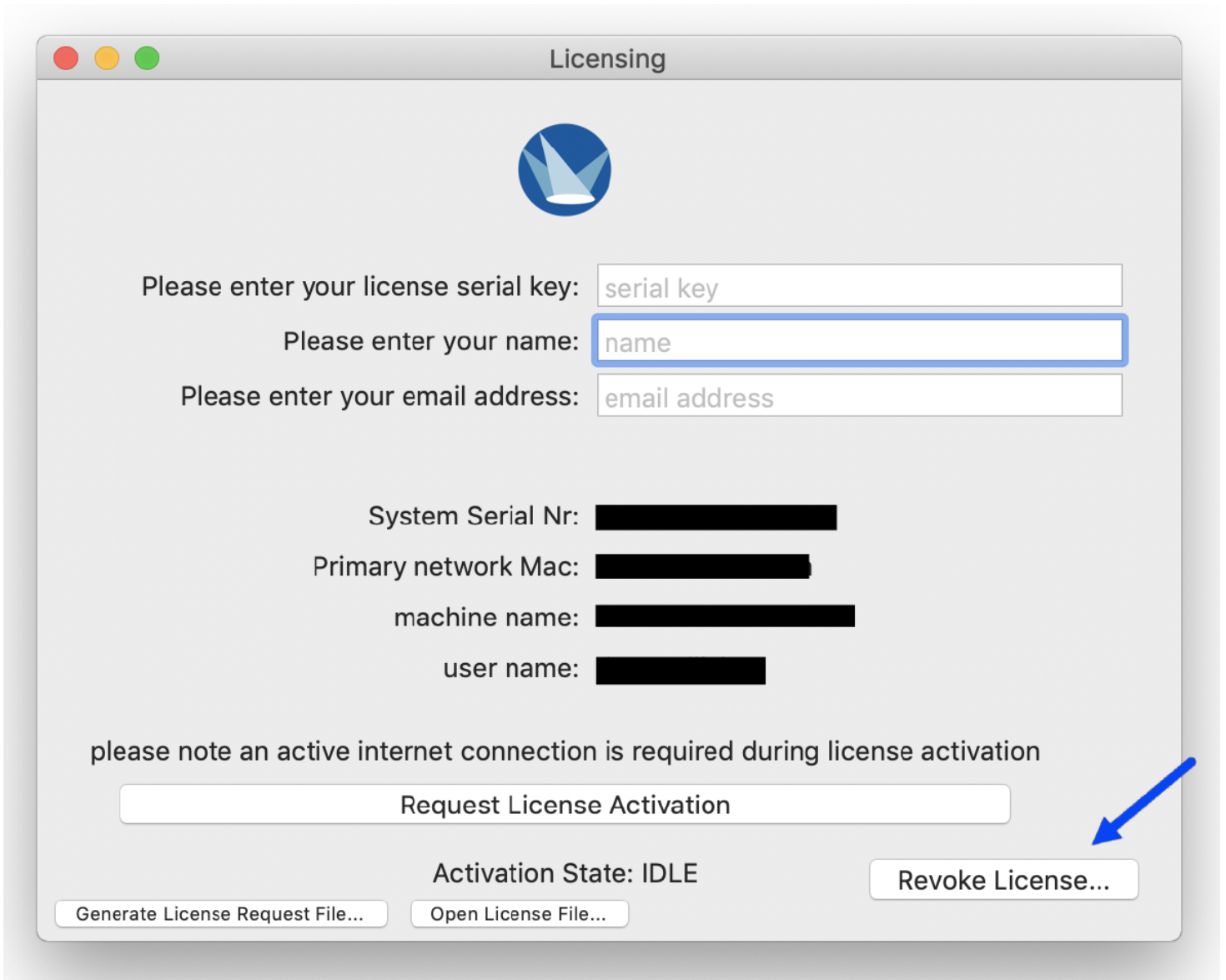
The software is now licensed for full use. If you run into any issues with licensing, be sure to [contact](#) our support team.

Revoking a license

If you want to switch your Follow-Me license to another machine, you'll have to revoke your license. Revoking a license can be performed in the licensing tab in the welcome screen of Follow-Me. To do this, make sure you have a solid internet connection.

1. Open the Welcome window of Follow-Me
2. Press the **License...** button
3. Press **Revoke License...** in the bottom right

4. You are now asked if you are sure that you want to deactivate the machine. Press **continue** to proceed.



You are now able to use the Follow-Me license key on another Mac.

Demo Mode

Using the demo mode

Using the demo mode

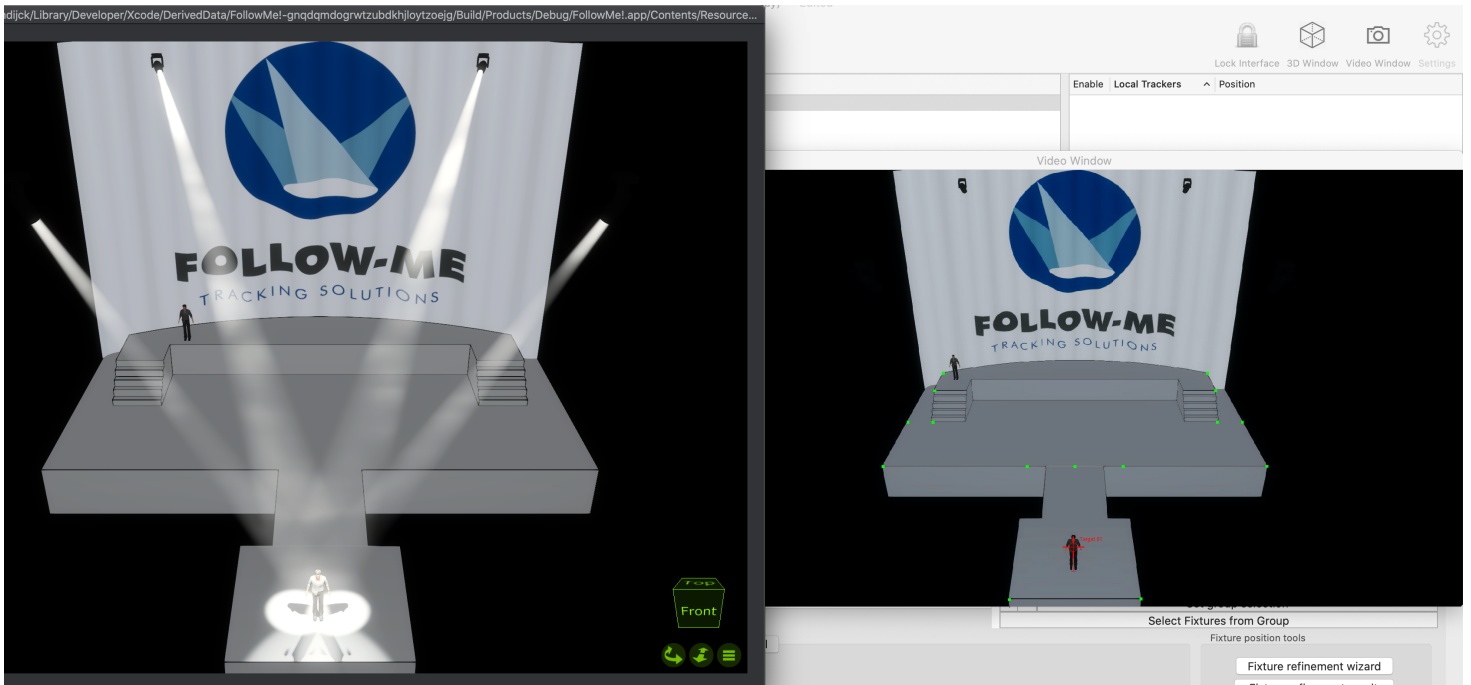
IMPORTANT: A network connection is required for the Demo Mode to run correctly. Otherwise, Follow-Me won't be able to send out Art-Net to the fixtures!

In order for people to easily try out Follow-Me, we've created a demo mode function. Watch the video below to get an introduction to this demo mode. We've distinguished between **Full demo** and **Empty demo**:

Full demo

Open Follow-Me; in the splash screen press **Start demo** and then **Full demo**. This will open Follow-Me and a Capture visualizer presentation window. Normally, the camera view (that you now see in the Capture presentation window) would be visible in the Follow-Me Video window, but due to technical limitations this is not possible in the demo mode. After opening the demo mode, we advise taking the following steps first:

1. Select all fixtures in the **Fixtures** tab, press **Direct Control** in the bottom of the window and decrease the beam intensity.
2. Select Target 1, either in the top of your screen or in the **Targets** tab.
3. Put the Follow-Me video window next to the Capture Presentation window. Move your target around in the video window to see the beams move due to your control!



NOTE: Follow-Me is typically operated using a Follow-Me Mouse Console, providing you with much easier target control. The demo mode is simply available for people to have a glance at the ease of Follow-Me and its setup.**

Now, with these fixtures, you can do whatever you want! You can change the height offset of the beams, give them color, or play around with fixture prediction.

NOTE: You can move around the camera in the capture presentation window. If you want to reset the camera to its base position, press Cmnd + H on your keyboard.**

Empty demo

Open Follow-Me; in the splash screen press **Start demo** and then **Full demo**. This will open Follow-Me and a Capture visualizer presentation window. Normally, the camera view (that you now see in the Capture presentation window) would be visible in the Follow-Me Video window, but due to technical limitations this is not possible in the demo mode. The empty demo functionality is used to try out a typical Follow-Me set-up. In the next sections we will provide you with the details on setting up this Follow-Me demo showfile.

NOTE: Ideally, if possible, use a second screen. This will allow you to put the capture presentation window on a separate screen.

1. Entering fixture positions

Select the fixtures, and fill in the X Y Z positions as provided in the table below:

	X	Y	Z	Note:
Fixture 1	-5	-10	12,20	Slightly hung at an angle to mimic real life situations (fixed at a later stage using fixture refinement)
Fixture 2	5	-10	12,20	
Fixture 3	-6,5	10	12,20	
Fixture 4	6,5	10	12,20	

You have now provided the fixture positions into Follow-Me. In real life, we could either enter these from fixture positioning plans, measure them using a laser meter, or simply estimate their positions with regards to the origin point in 3D. We can estimate its positions since Follow-Me will still calculate the exact position and orientation of your fixtures at a later stage using fixture refinement.

2. Entering calibration point positions

Normally, we would now start putting down calibration points near the edges of our stage to define the outline of our performance area. As we are using a visualizer, we will need to work with the pre-determined calibration point positions provided in the table below.

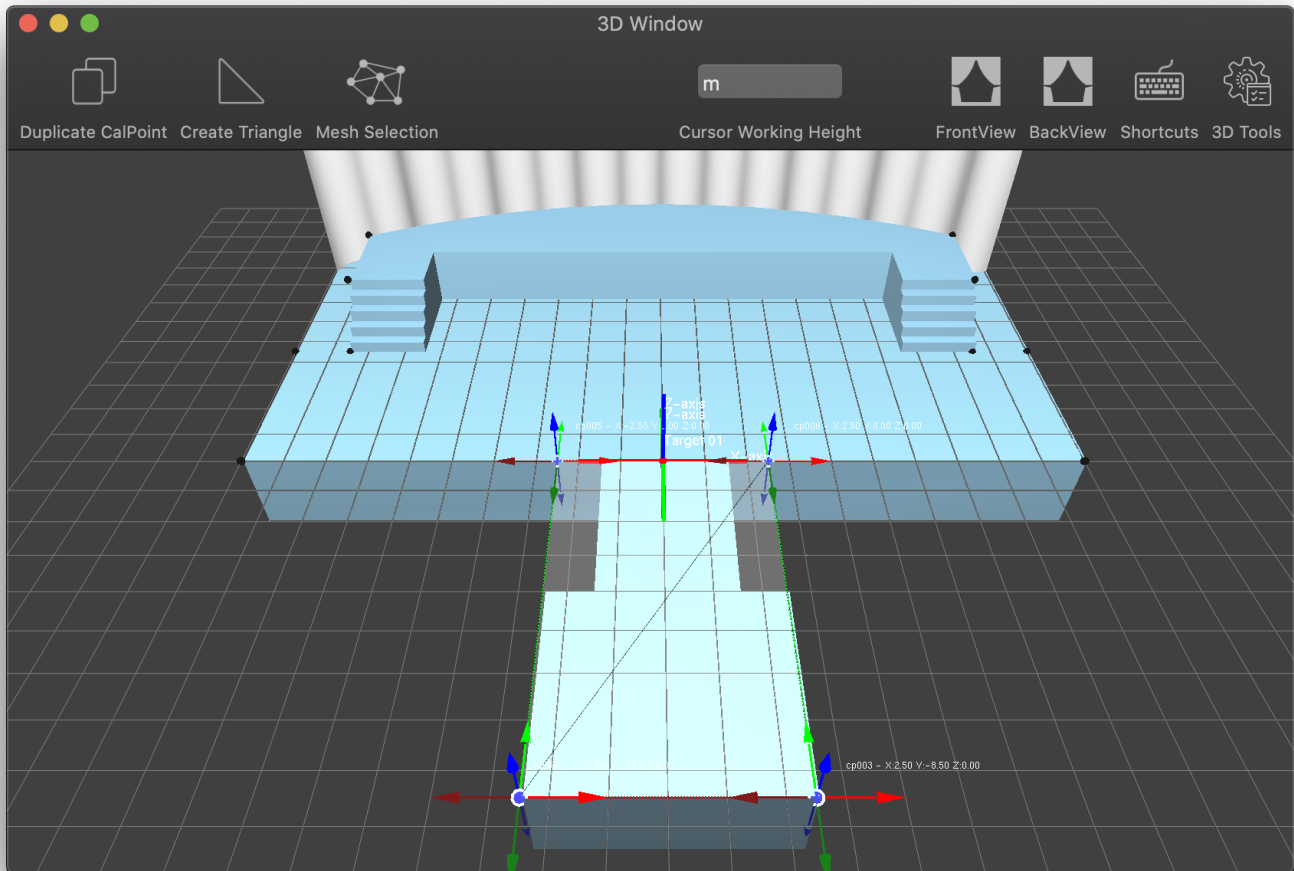
Go to the **Calibration tab**. As you can see, the only calibration point we have so far is the origin point. You can also go to the **3D window** in the top right to have this calibration point visualized on top of the 3D model of the stage. Now we have to add more calibration points provide Follow-Me with the dimensions of the performance area. You can see how this will look by going to the Capture presentation window and pressing **Cmd + Shift + H**. For demo purposes we will place the calibration points on those positions, provided in the table below.

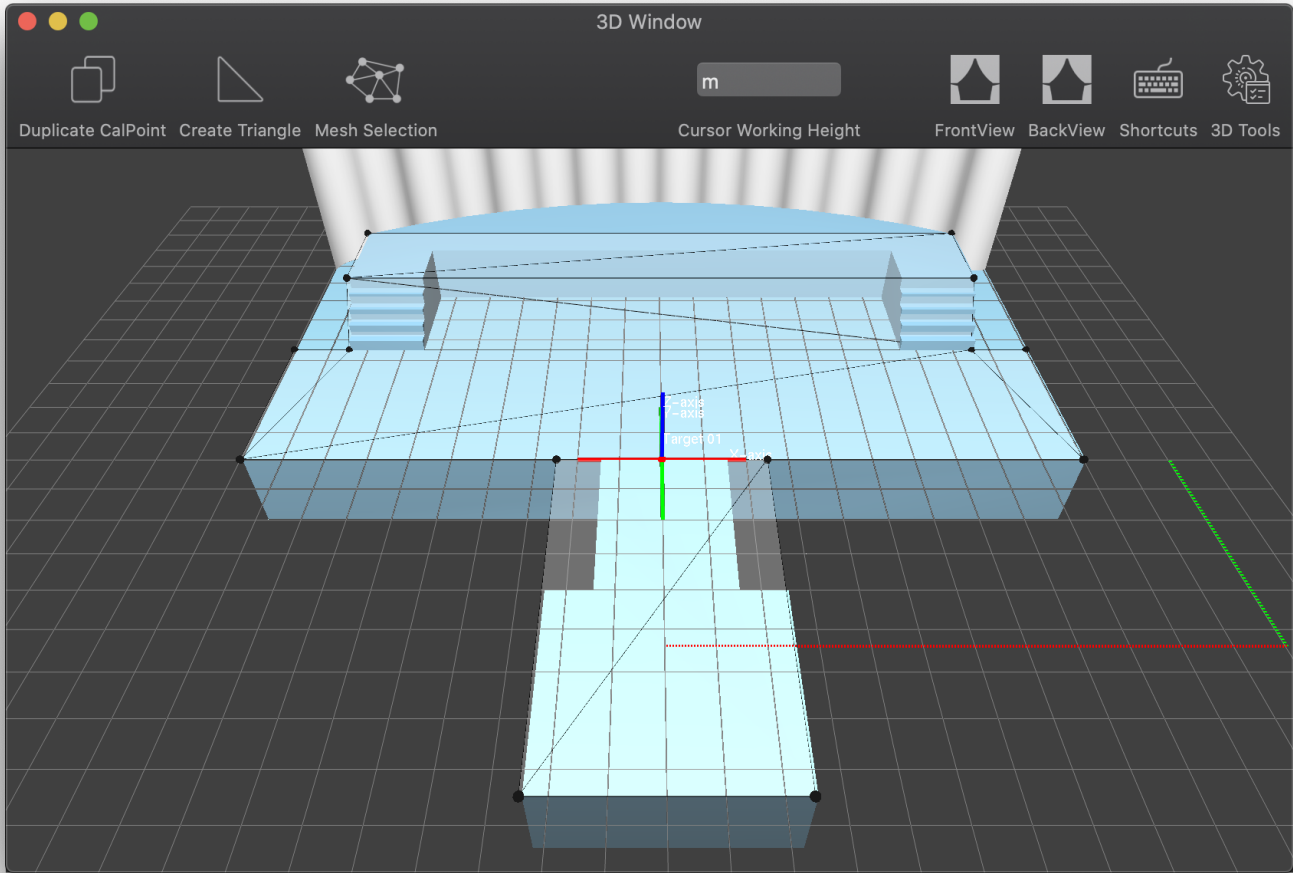
Fill in these values in the 3D window or in the **Calibration tab**.

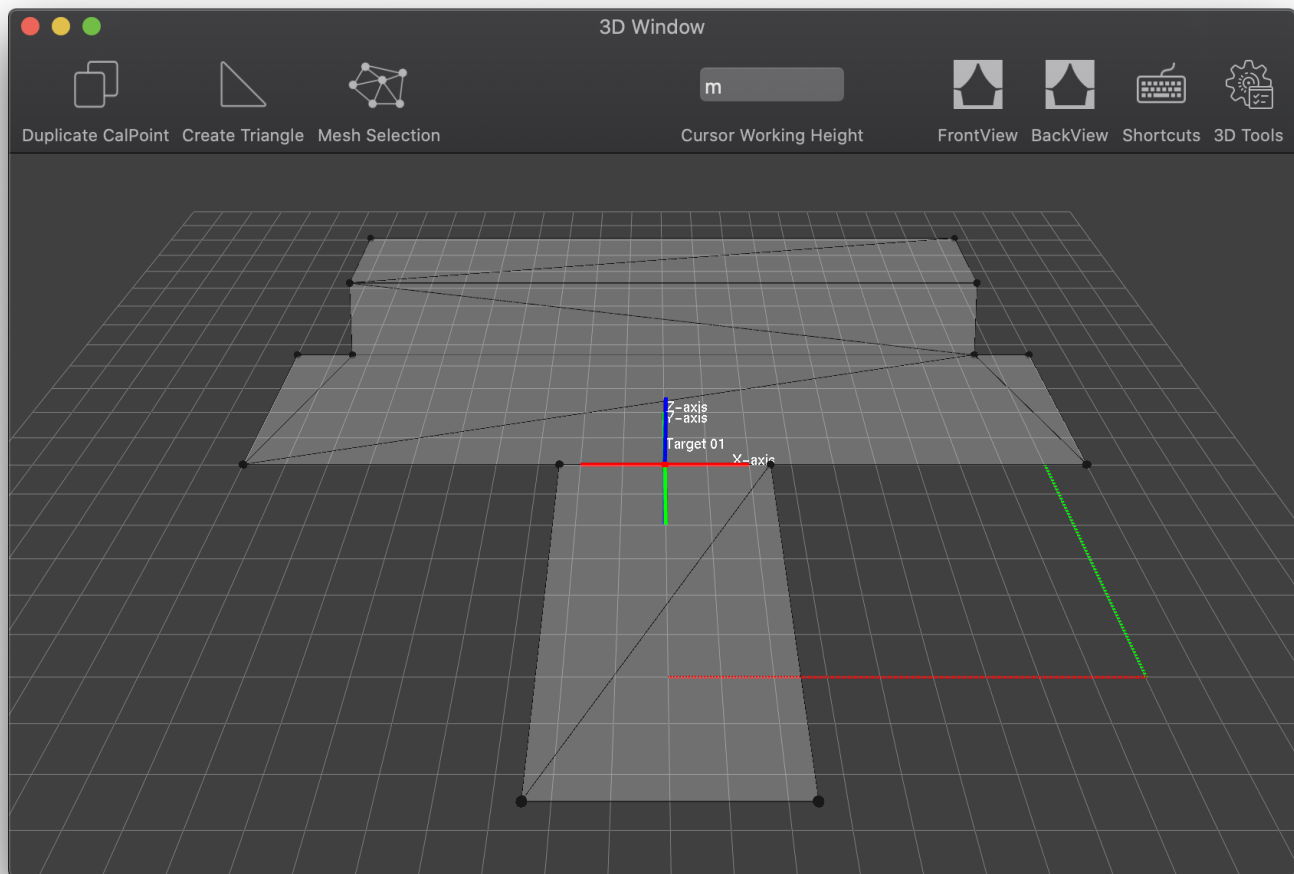
Index	Name	xPosition	yPosition	zPosition	notes
1	Origin point - 1	0	0	0	-
2	Thrust - 2	-2,5	-8,5	0	-
3	Thrust - 3	2,5	-8,5	0	-
4	DS - 4	-10	0	0	-
5	DS - 5	-2,5	0	0	-
6	DS - 6	2,5	0	0	-
7	DS - 7	10	0	0	-
8	MS - 8	-10	4,5	0	-
9	MS - 9	-8,5	4,5	0	Stairs off-stage bottom
10	MS - 10	8,5	4,5	0	Stairs off-stage bottom
11	MS - 11	10	4,5	0	-
12	Stairs SR - 12	-8,5	5,7	1,5	-
13	Stairs SL - 13	8,5	5,7	1,5	-

Index	Name	xPosition	yPosition	zPosition	notes
14	USR - 14	-8,5	8,2	1,5	-
15	USL - 15	8,5	8,2	1,5	-

After adding all these points, we still need to connect these points together. We call this "creating the mesh". This is basically the performance area on which the target in Follow-Me will move around. Meshing is easily done in the 3D window. Select 3 or more calPoints that should be connected to each other and press the **Mesh selection button**. This will create a grey area called the mesh. Do this for all points that should be connected; take the images below as inspiration:







You have now set your calibration points and created the mesh. Follow-Me now understands the dimensions of your performance area!

3. Camera calibration

Now we still have to connect our 'camera' to performance area that we just created in Follow-Me. To do so, we need to calibrate our camera, so that Follow-Me is able to calculate the position and orientation of the camera in order to draw a crosshair correctly over the performance area. To understand this, please also check out our camera calibration video tutorial in My Follow-Me.

Go to the **Cameras** tab, and press **Start wizard** in the Camera position calculation box. Check the checkboxes and select the **Capture lens profile lens**. The camera is not flipped. In the next stage, roughly place the model over the performance area, so that you understand which calibration point in the model belongs to which location on the performance area. In the next stage, you must specify which points you want to use for camera calibration. These should ideally be points on the outer edges of your performance area. In this case, we recommend the following points:

CamPoints

- Thrust - 2
- Thrust - 3
- DS - 4
- DS - 7
- USR - 14
- USL - 15

Then move these points to their exact location on the video window. You can use the 3D window to make sure that you are putting the calibration points exactly where they need to be. After doing so, you can press the **Calculate** button.

In the final stage of the Camera calibration wizard, you get to see the result of how well you performed it. The value you see is the *average pixel error there is between the given CamPoint location and the calculated location*. The software provides feedback on the performed calibration. As long as the figure is green, the calibration went well.

All calibration points should now be at their correct position on the video screen. You have now connected the camera with the performance area in Follow-Me!

NOTE: You can move around the camera in the capture presentation window. If you want to reset the camera to its base position, press Cmd + H on your keyboard.

4. Connecting your fixtures to a target

Now, you should connect your fixtures to a target. Select all fixtures in the **Fixtures** tab, and select the Target in the **Targets** tab. Then press **Assign fixtures to target**. You should now be able to move the fixtures correctly around the stage! Set the Follow-Me video window next to the capture visualization presenter window. Actions you perform in the video window should take place in the presenter window now!

5. Fixture refinement

One of the fixtures is however not hanging perfectly straight down. Fixture 1 is hanging at a slight angle. This is done to replicate a real life scenario. To let Follow-Me improve this, we can start the **Fixture refinement wizard** in the **Fixtures** tab. In order to be able to follow the steps in this wizard, a few points must be indicated as fixture points. Ideally you want to pick points on or around the edges of your performance area. In this case, the same points we used for camera calibration can be used for fixture refinement. This can be indicated in the **Calibration** tab using the **Fixt** checkboxes.

Follow the steps in the fixture refinement wizard so that Follow-Me can calculate the exact position and orientation of your fixtures! Make sure to press **Start refinement** in stage two of the fixture refinement in order to start the process.

When you're done with the fixture refinement, you can see the result of the refinement in the last screen of the wizard. This is calculated with the location of the calibration points together with the pan/tilt values we record for each fixture.

Now, select all fixtures and turn up the intensity. Well done! Currently the fixtures are set to a height of $z=0$, if you want you can change this in the **Targets** tab.

6. Operating

You can now do whatever you want in the Follow-Me software. You can change the height offset of the beams, try out continuous beam size, give them color, or play around with fixture prediction. Well done!

Show setup

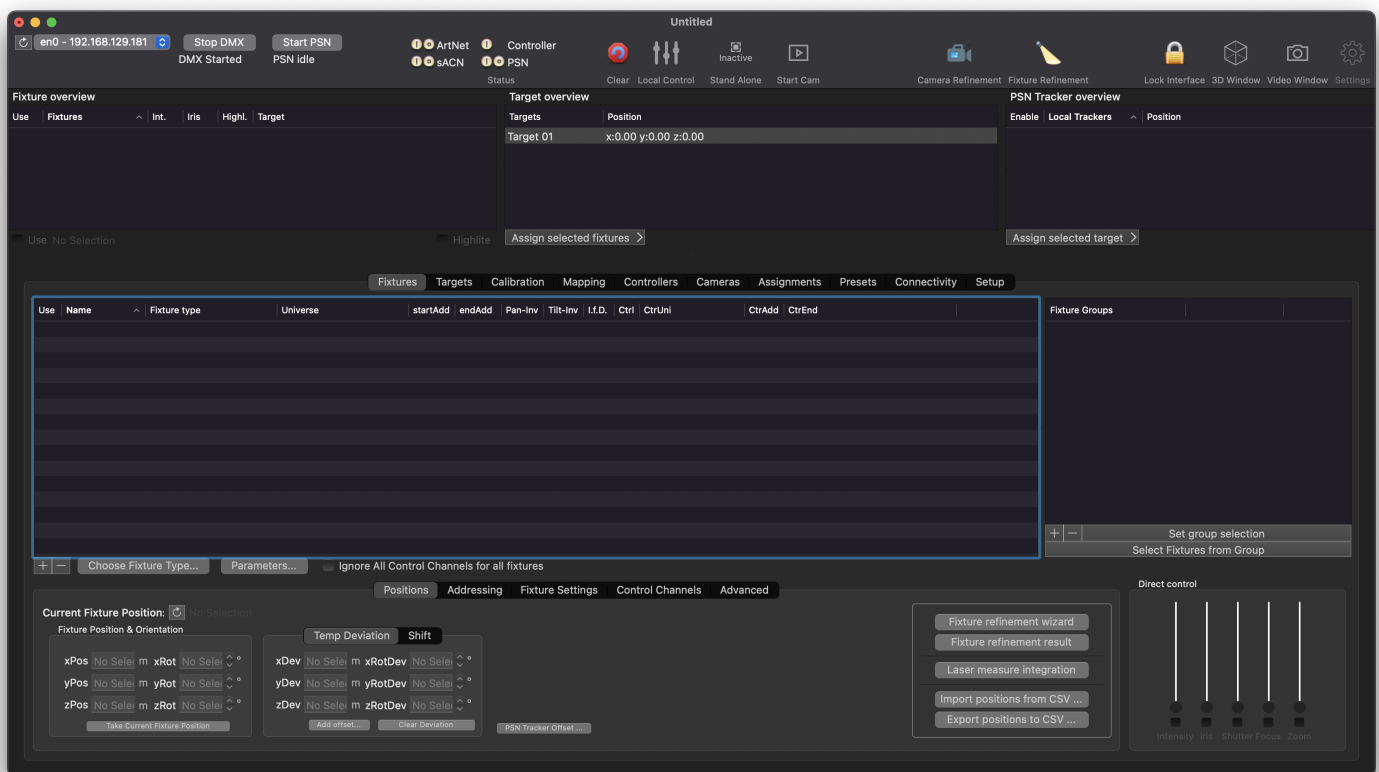
Starting a new show

Starting a new show

To set up a new show, you must go through the details in the setting pane, for each tab. Your show can be simple, with only one or two moving lights and one mouse console; or complex, with multiple fixtures and multiple mouse consoles.

In this section, we will cover how to create a showfile, and give an overview of the Follow-Me screens.

1. Simply start the Follow-Me software, and choose **New Document** from the welcome screen. The Follow-Me main window pops up, with all fields blank.



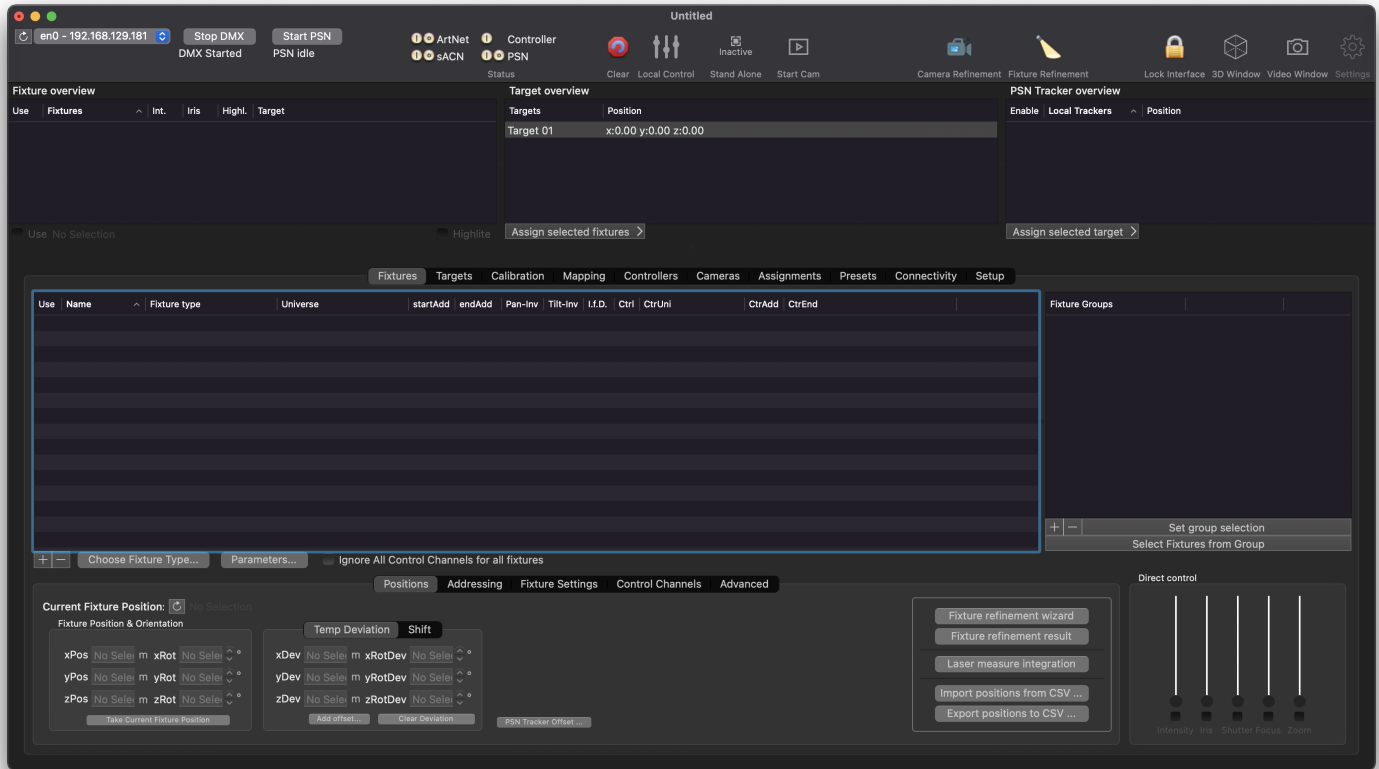
2. Check the sACN / Art-net connection in the top. This should state the working Ethernet connection.
3. You can use the dropdown to select the network adaptor you want to use and once the show has been saved this will be part of your show file.

If the Art-Net or sACN indicator is not green, please check your network configuration. More on network configuration for using follow me can be found in Network set-up.

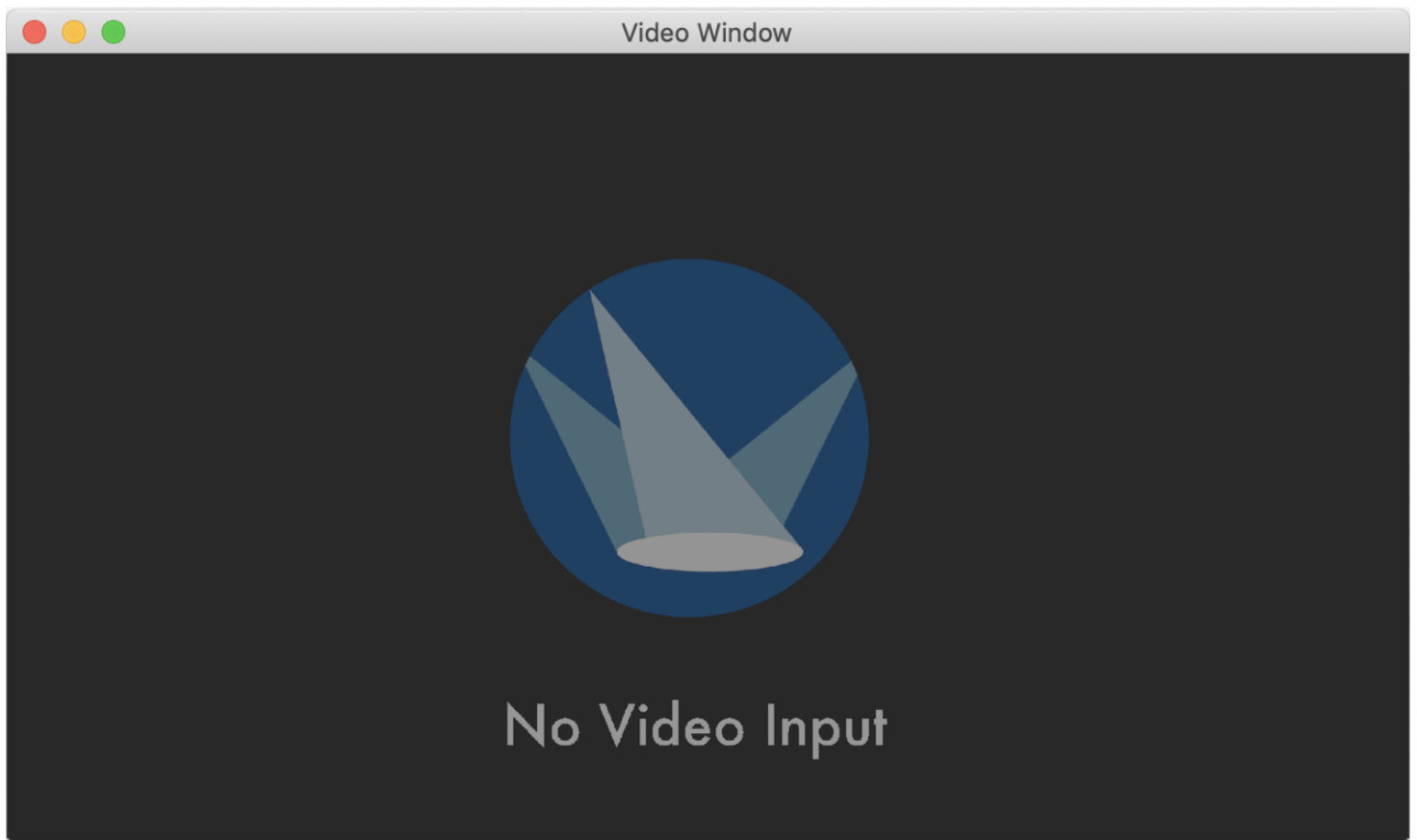
Navigating Follow-Me

In this section, we go into detail on how to navigate the Follow-Me software. The next images show what you'll see when opening Follow-Me for the first time. This might be overwhelming at first, but you'll feel at home by reading the instructions in this manual in no time.

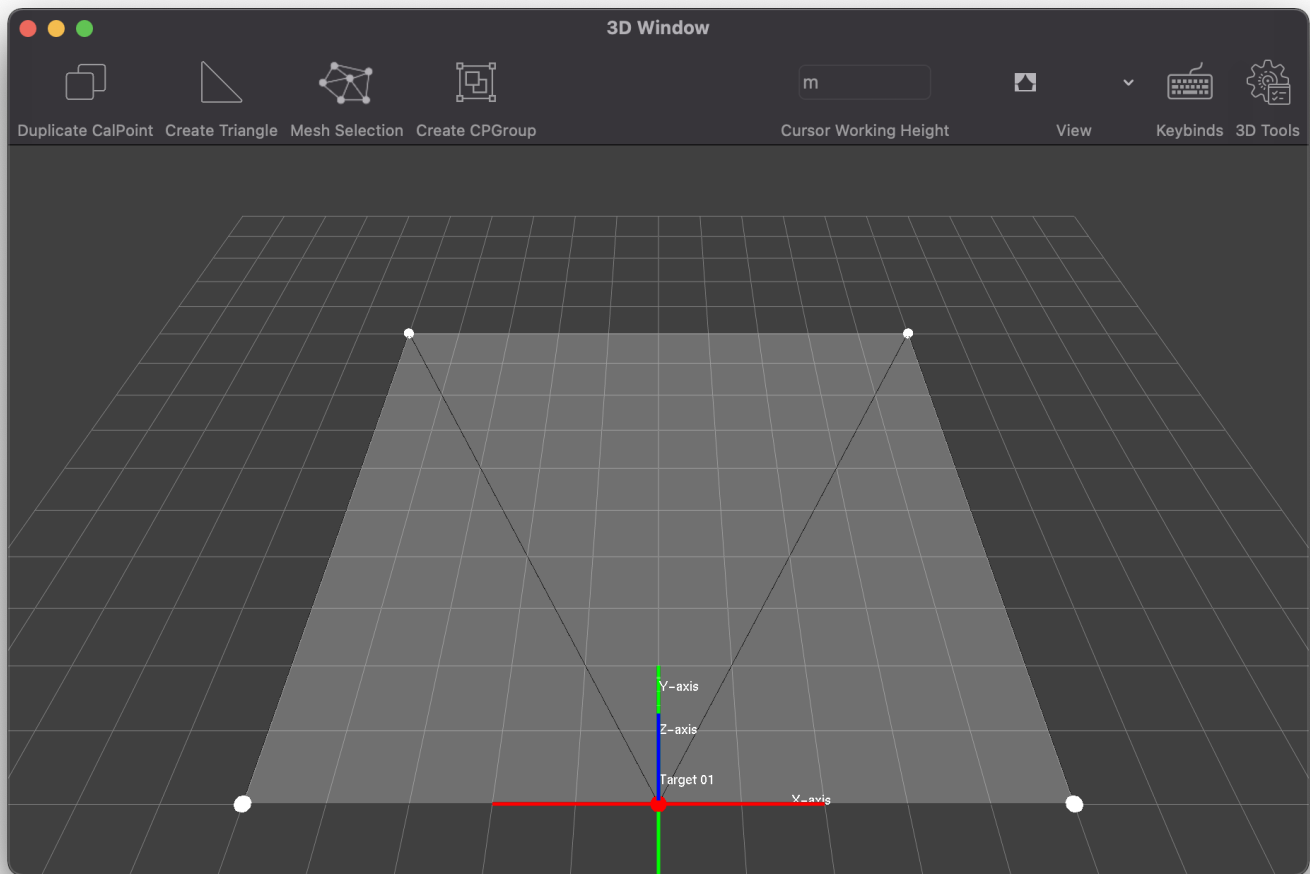
This is the Follow-Me main window, in which you'll be spending the most time when setting up your show. In the rest of this section we will go into greater detail on the different menu's and their functions.



This is the operator Video Window. You'll find the camera feed here once you have set-up and attached your camera. In this window, the operator will be using the Follow-Me mouse console controlling a crosshair to track performers on stage.



This is the 3D View window of Follow-Me. In this view, you are able to set-up the 3D mesh, which comprises of the outline of your performance area that Follow-Me will work with. You can specify the $x/y/z$ coordinates of your calibration points here. Each Follow-Me showfile starts off with a basic 9 point mesh, which you can extend to your liking.



Menu features

We'll now go over the main features in each tab.

Fixtures

In this tab, you're able to add fixtures you want to run through Follow-Me. You can change setting per fixture, or per group of fixtures. You'll be able to find all the fixture details in the fixture table.

Targets

In this tab, you're able to indicate the specific amount of targets that you want to follow in Follow-Me. You can assign specific fixtures to specific targets in this tab.

Calibration

In this tab, you'll have an overview of all your calibration points. These are points on your stage of which you know the x/y/z location in 3D space. You're also able to easily generate a grid mesh of calibration points with the press of one button.

Mapping

In this tab, we define what attributes are mapped to which Follow-Me console. This for example includes intensity, target offset and mouse sensitivity.

Controllers

In this tab, we can find our connected Follow-Me Mouse and Fader consoles. We can assign controller sensitivity and mapping to these consoles.

Cameras

In this tab, you can set your camera options. You're also able to calibrate your camera to the performance area, once

your calibration points and camera have been set-up correctly.

Assignments

In this tab, you can combine fixtures and targets into actions. For example, linking a spot to another target with the press of a button.

Presets

In this tab, you can find and set all your presets of targets, that can be invoked with a keyboard key. At the lefthand side is a list of all the presets, you can add, delete presets and edit parameters and names.

Connectivity

On this tab, you can specify your DMX universes, with input and output. You have the ability to input and output sACN or Art-Net. Also, you have access to all local and network PSN settings. You can for example use PSN to the target information to external systems, or to link multiple Follow-Me systems together.

Setup

In this tab, you'll be able to adjust certain settings in Follow-Me, such as whether you want Dark mode enabled or whether you want video in a separate window or not. Also, you're able to insert a 3D model into Follow-Me.

Track-iT and/or TraXYZ

In these tabs, you'll be able to see all details of the Track-iT and/or TraXYZ auto tracking module if acquired. This includes information about tags, anchors and objects.

Now you know a bit more about the features that can be found in the Follow-Me tabs, we're ready to get started. How to get started depends on whether you have a 3D model (.dwg) of your stage or not.

Creating the mesh

Creating the mesh

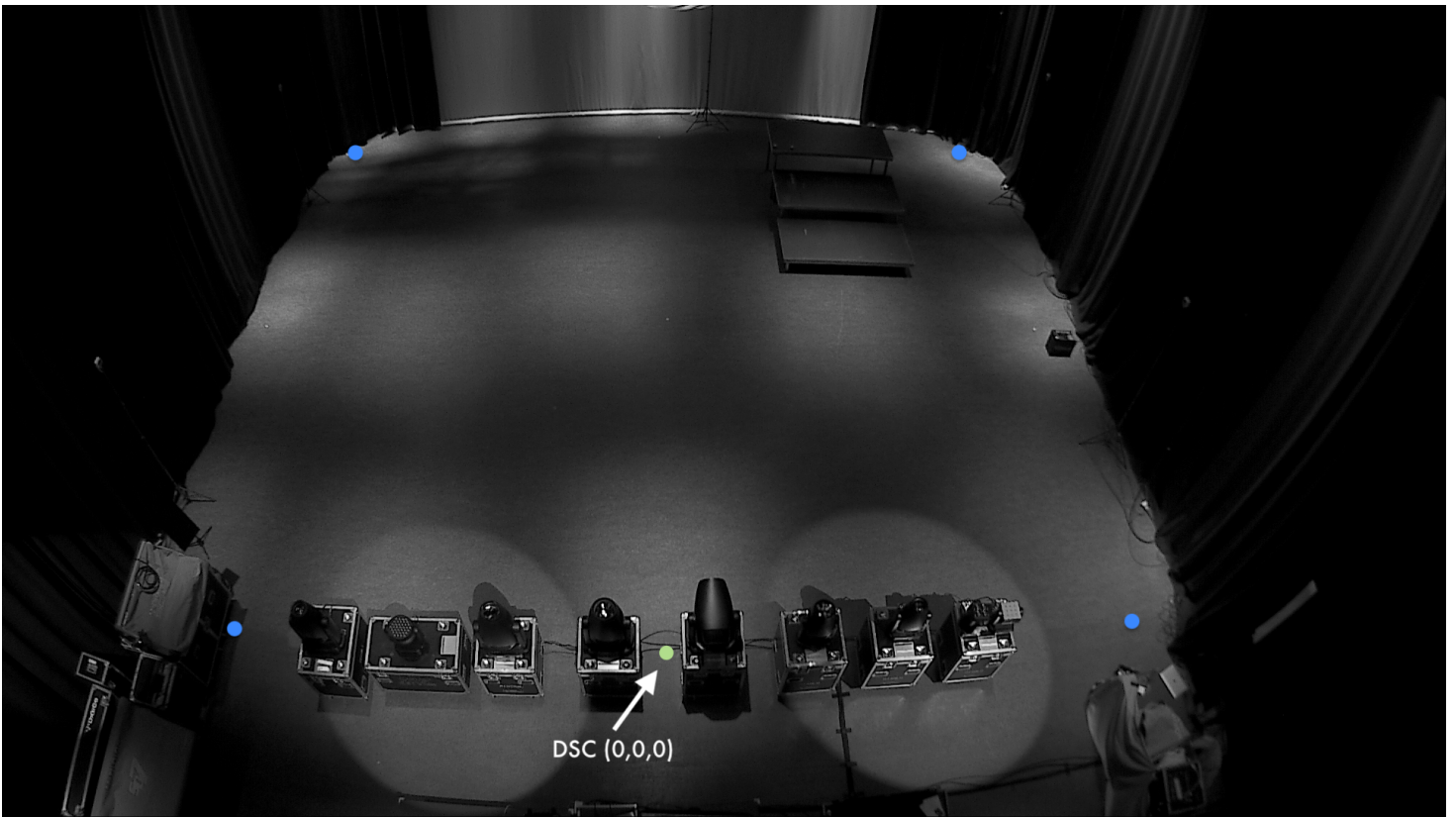
Follow-Me needs to know the dimensions of the performance area. In order to do so, we should start off by creating a calibration grid of the stage. Before going into the details in the Follow-Me software, we should measure our stage dimensions in real life.

Measuring the dimensions of the performance area

1. Go to your performance area. Decide on a datum (XYZ 0,0,0) point. From this point, all fixtures, calibration points and potential anchors should be measured, as to build a 3D model of your stage. It is typically advised to have this be your downstage center (DSC) point, as this is generally a point that can easily be reached. Take the image as an example.



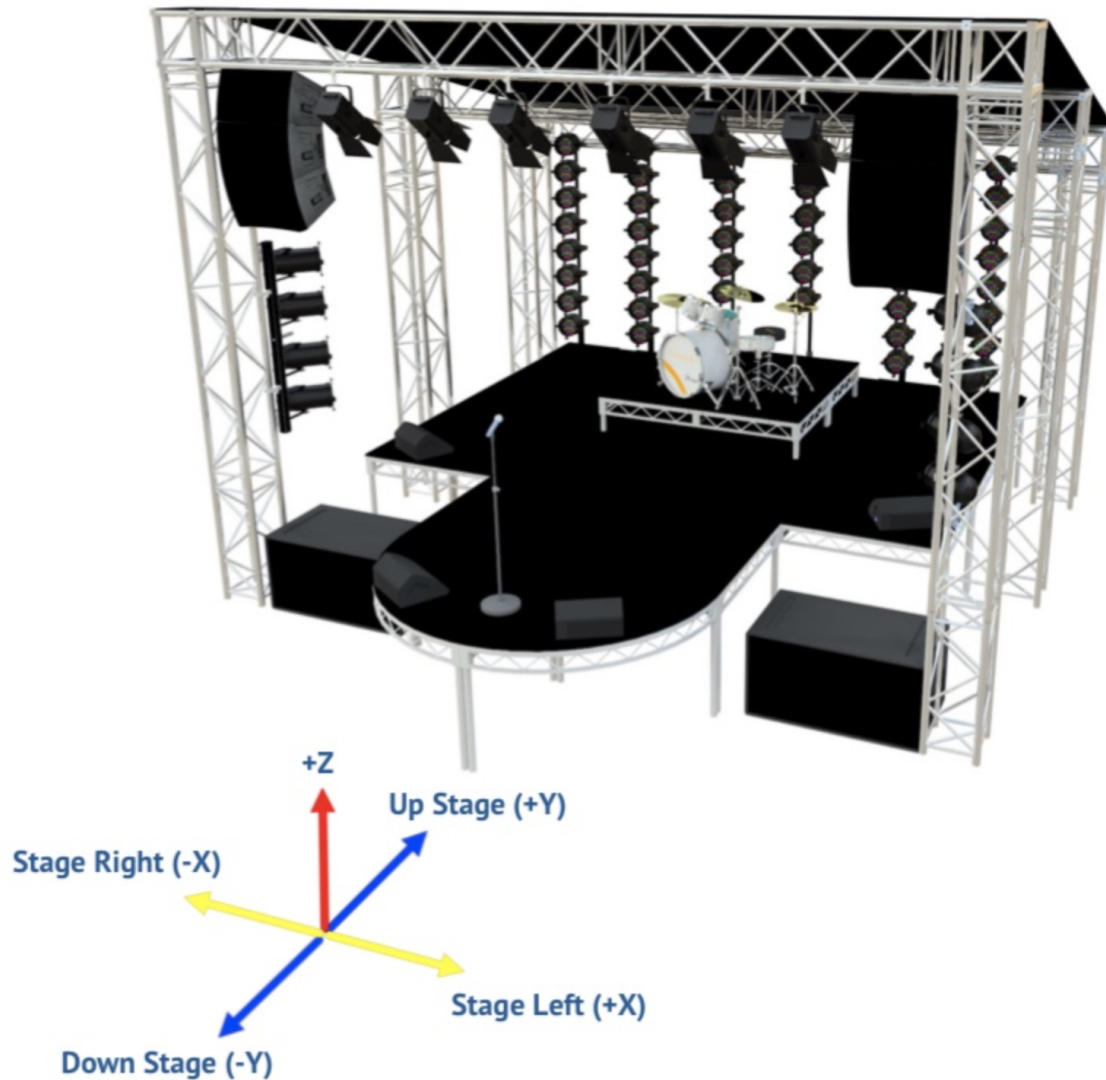
2. Now, you should put calibration markers on all the edges of your stage, to define the outline of your stage. Take the image as an example. You can do this by putting a piece of tape on each of those places on your stage. You can use as many calibration points as you want, but for this stage 4 calibration points on the edges + an origin point should suffice.



NOTE: If you want to also map the stagedecks, you should also put calibration points on the corners of those, on the top.

3. Once you have placed all your calibration markers on the stage, we have to know the distance of these markers in relation to your datum point in 3D space. See image below to get an idea on how to measure this. The measuring can be performed with a tape measure, or a laser distance measurer. The Leica S910 is integrated in Follow-Me, see [Measuring locations with Leica S910](#) for information on this.

A typical flat surface will always have a z-value of $z=0$.

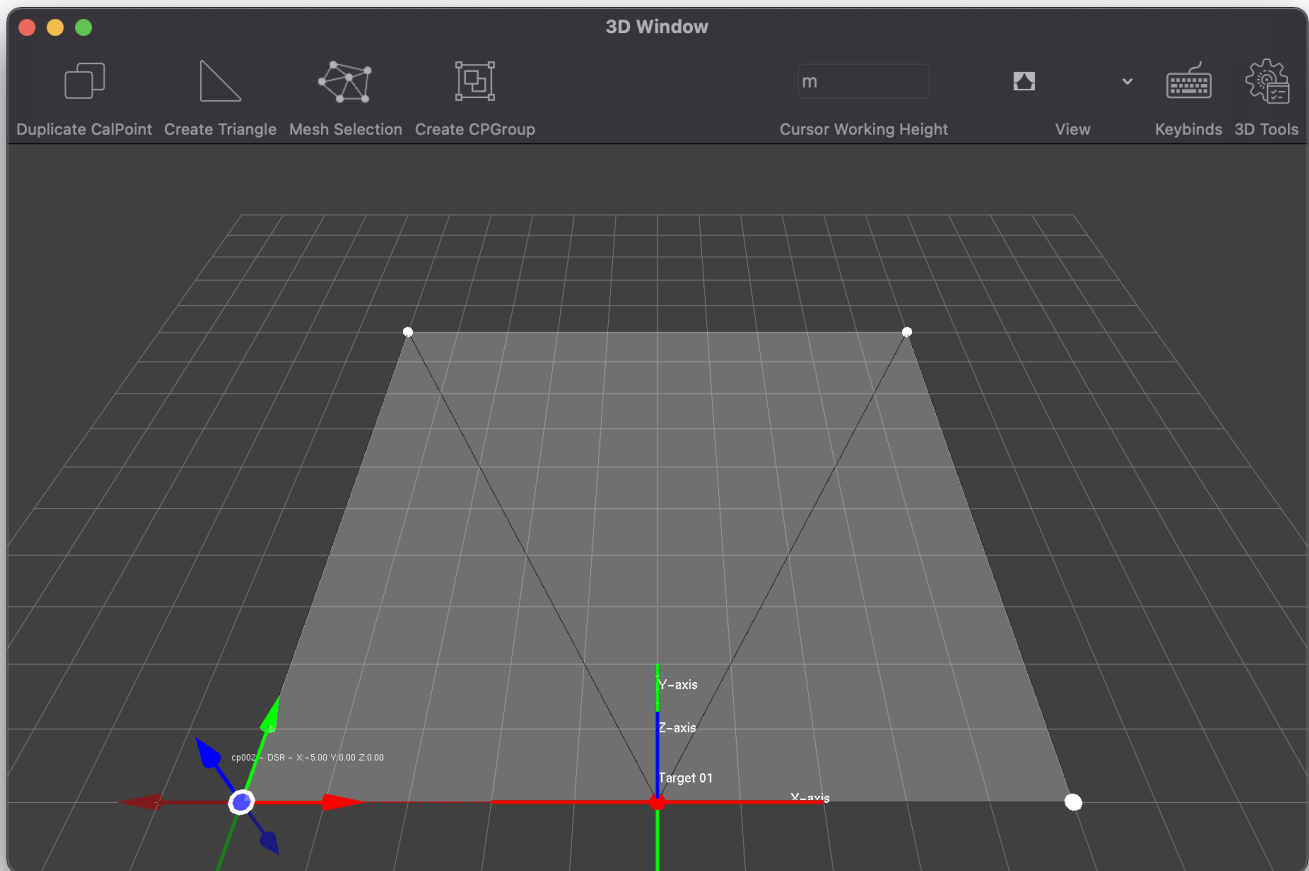


Making the mesh in Follow-Me

Once you have collected all the measurements of your calibration markers, you have to fill in your measurements in the Follow-Me software:

1. Go to the **Calibration** tab. Here you'll find a basic calibration point grid of 5 calibration points.
2. Now, when you switch over to the **3D Window**, which you find in the top right of Follow-Me. You'll see those 5 calibration points connected together, which is the mesh Follow-Me uses to specify the performance area. You should now change this mesh based on the measurements of your performance area, so that Follow-Me's coordinates will correspond to the situation in real life. You can change the calibration point values in the Calibration tab or change the calibration point positions by dragging the red (x), green (y) and blue (z) arrows in the 3D window.

I...	Calibration Points	xPos	yPos	zPos	uPos	vPos	Cam	Fixt	Pin	Notes
1	cp001 - Origin	0,00	0,00	0,00	0,50	0,10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	cp002 - DSR	-5,00	0,00	0,00	0,08	0,10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	cp003 - DSL	5,00	0,00	0,00	0,92	0,10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	cp004 - USR	-5,00	10,00	0,00	0,08	0,93	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5	cp005 - USL	5,00	10,00	0,00	0,92	0,93	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



3. In the 3D View, you can easily create extra calPoints by pressing the **Duplicate CalPoint button** (**⌘ + D**). You can also duplicate easily by selecting a calPoint and using the following keyboard shortcut: **⌘ + drag calPoint**. Using **Control + double click** you can create a calPoint at the position of the cursor. Before doing so, you can change the **Cursor working height** in the top right of the 3D window. Using this, you can decrease or increase the height of calPoints you're going to add.

NOTE: You can also add calibration points in the Calibration tab by pressing the **+** button.

Finally, you can navigate the 3D view more easily by using the following keyboard shortcuts:

Arrow keys

Adjust the x/y camera position in 3D view.

Arrow keys + ⌘

Adjust the z camera position in 3D view.

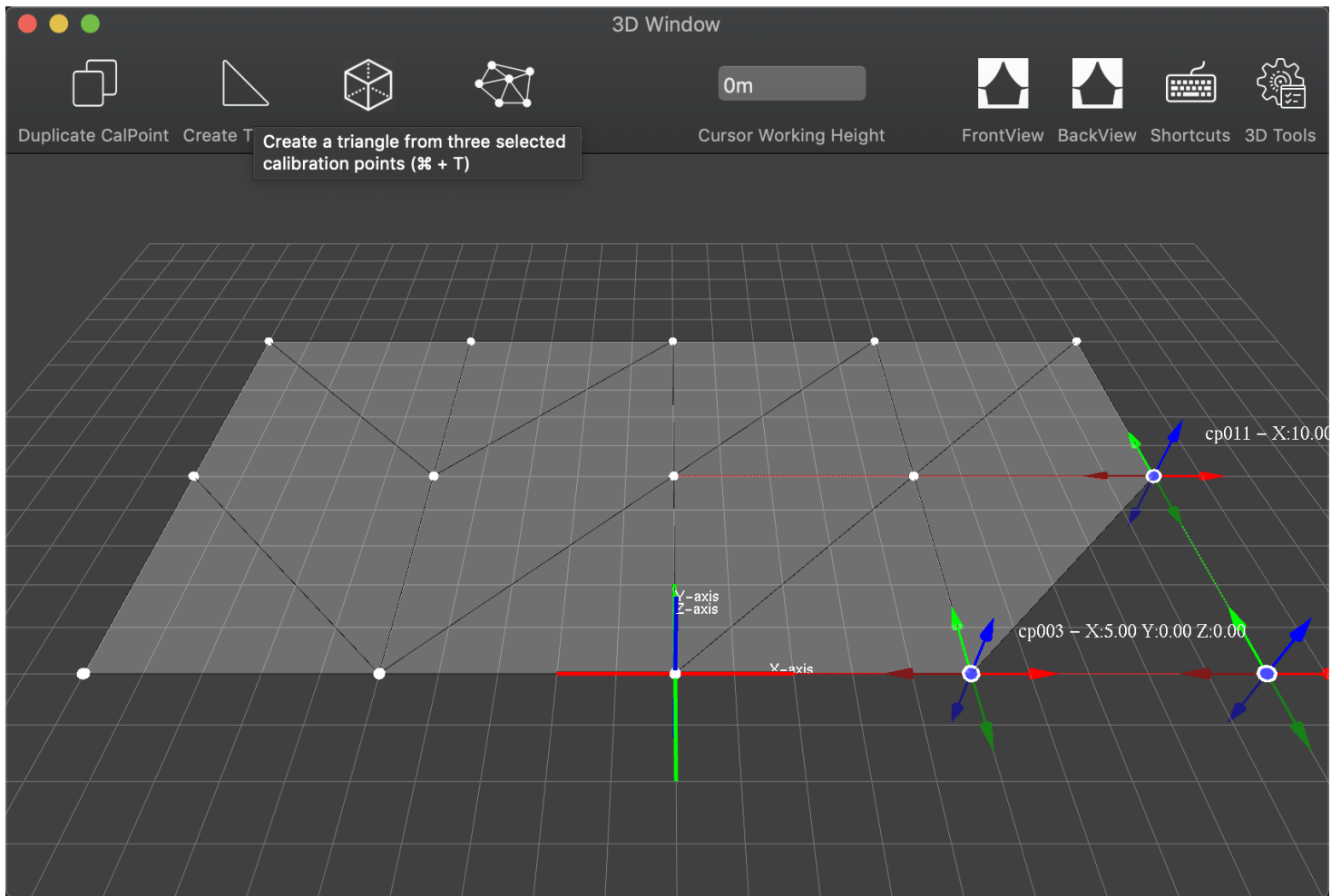
Arrow keys + ⌘

Rotate the camera in the 3D view.

All the shortcuts can also be found under by pressing the **Shortcuts** button in the top right of the 3D Window. This will open up a separate panel that emphasizes them.

When you have added more calPoints, there's one final step to undertake. You have to add so-called Triangles, which will make all the extra calibration points part of your mesh.

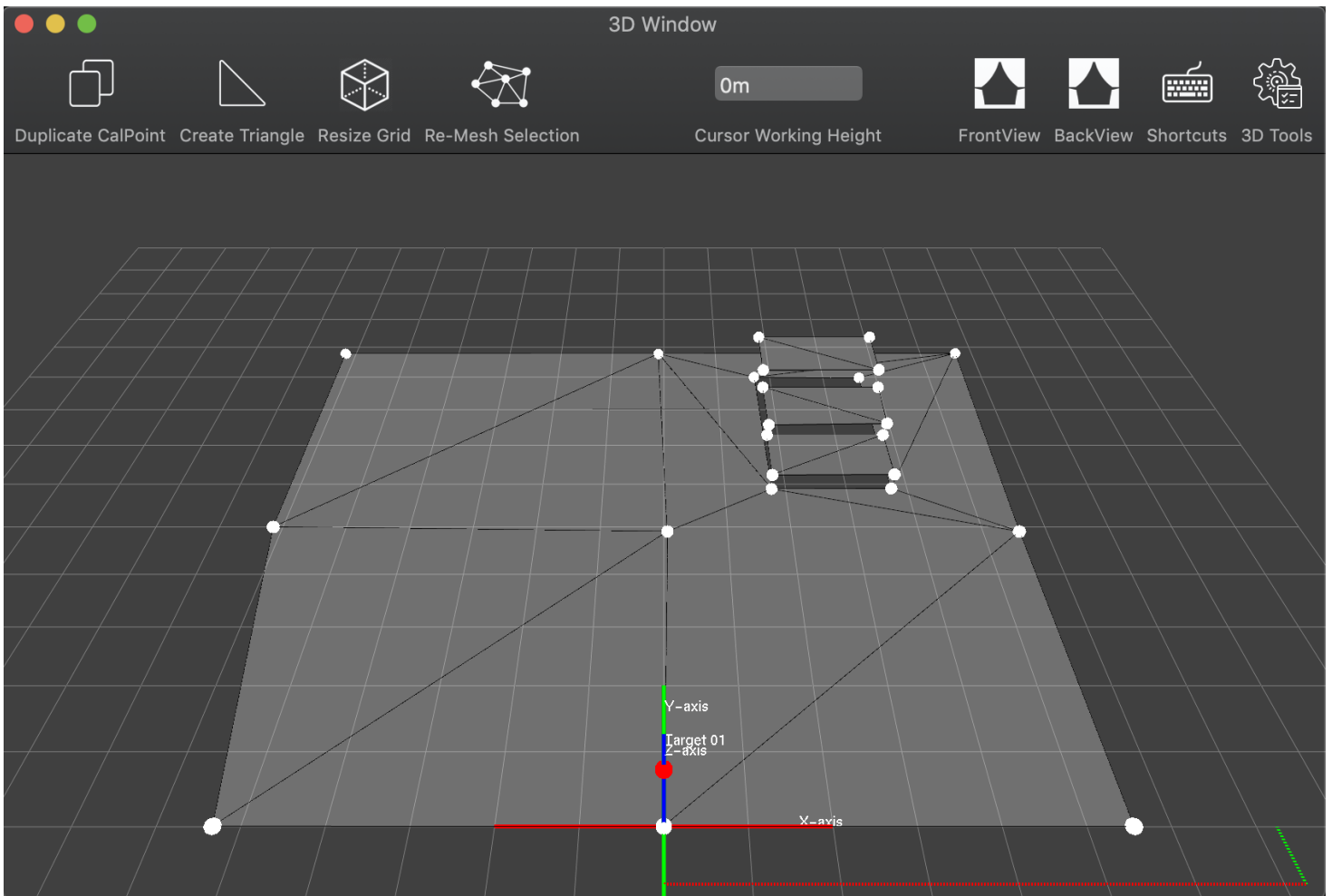
1. To do so, select three calibration points that stand apart from your mesh by using the ⌘ button. Then press Create Triangle. You should now see this appear on the mesh in your 3D view. Do this for all your calibration points. If a calibration point is selected, you can click on it again to deselect it, speeding up the triangulation process.



2. To make a coherent mesh, you might need to delete specific triangles or calibration point. To do so, just select the triangle (by holding the **option** button) or calibration point that should be deleted, and press the **Backspace** button on your keyboard. You can also delete multiple calibration points or triangles at the same time using the **command** button. **Please note that when you delete a calPoint, you also delete its attached triangles!**
3. Once you have done all this, your mesh should be coherent, and your 3D view should correctly display your real life situation.

Be aware: Ideally you do not want to get an overlapping mesh, as this could clutter the 3D window. To make sure that you don't have an overlapping mesh it is a good practice to get a top view of the mesh. If the mesh is lighter of color in some parts you have an overlapping mesh.

If we'd map the situation as we see in the camera feed at the top of this page, we would have the following result, where we also mapped the stagedecks:



NOTE: When multiple layers of mesh are present over one another, Follow-Me will always snap to the upper layer. This is useful if you have a higher stage deck or riser.

Importing calibration point CSV

You're also able to update calibration point positions from CSV. Data must be put in the following order for the import to work. You'll still also need to mesh the calibration points together using triangles in the 3D view.

Index	Name	xPosition	yPosition	zPosition	Notes
1	cp001	-5	0	0	
2	cp002	0	0	0	DSC
3	cp003	5	0	0	
4	cp004	-5	5	0	
5	cp005	0	5	0	
6	cp006	5	5	0	
7	cp007	-5	10	0	
8	cp008	0	10	0	
9	cp009	5	10	0	

NOTE: Exporting to CSV is also possible.

Loading in a 3D model

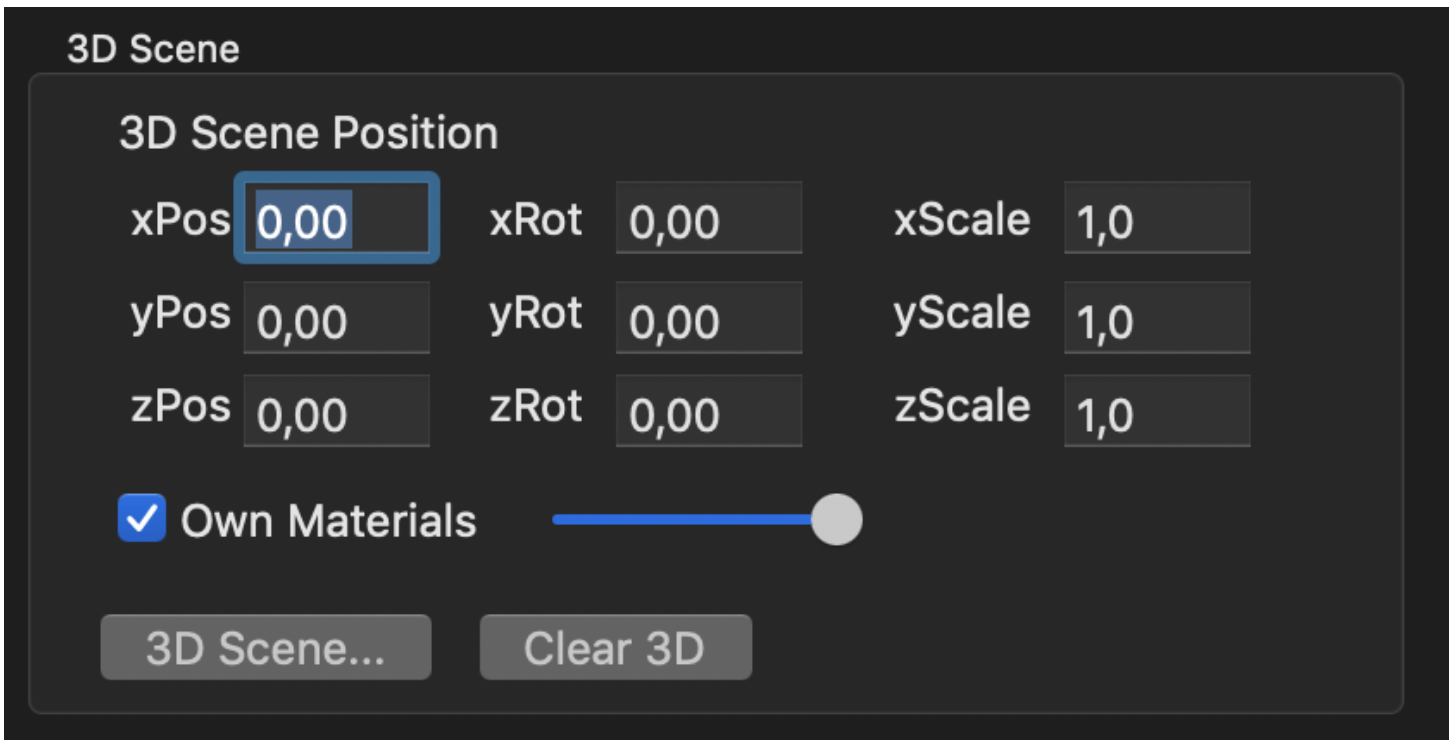
To make the mesh creation process a bit easier, you might also want to load in a 3D model of your stage into Follow-Me. When you want to load in your 3D model into Follow-Me, you should first make a copy of this file and get rid of all the things that are redundant for Follow-Me. All that Follow-Me needs is the 3D model of your stage, thus the fixtures, performers, and other unneeded things should be removed.

You'll need to decide on a useful centre point or datum point (x/y/z 0,0,0), which will stay the same throughout the shows. All the other calibration points, fixtures, and potential anchors will have to be measured from that specific location. We usually suggest the downstage-centre point of your stage. Valid model extensions that Follow-Me supports are:

- 3D
- 3DS
- 3MF
- AC
- AC3D
- ACC
- AMJ
- ASE
- ASK
- B3D
- BLEND
- BVH
- CMS
- COB
- DAE/Collada
- DXF
- ENFF
- FBX
- glTF 1.0 + GLB
- glTF 2.0
- HMB
- IFC-STEP
- IRR / IRRMESH
- LWO
- LWS
- LXO
- MD2
- MD3
- MD5
- MDC
- MDL
- MESH / MESH.XML
- MOT
- MS3D
- NDO
- NFF
- OBJ
- OFF
- OGEX
- PLY
- PMX
- PRJ
- Q3O
- Q3S
- RAW
- SCN
- SIB
- SMD
- STP
- STL
- TER
- UC
- VTA
- X
- X3D
- XGL
- ZGL

To load in the model, follow these steps:

1. In the 3D Window, press the **3D Tools** button in the top right.
2. In the bottom left, select the **3D Scene...** button. A finder window opens up, in which you should select your 3D model file and press **Open**



3. Your 3D model is now loaded into Follow-Me.

You might need to play with the 3D Scene Position a bit to perfect the model, typically using the Rotation fields (xRot, yRot, zRot). To view your 3D model, open up the 3D view window. You can quickly open this by scrolling through the Follow-Me windows using the **⌘ + ~** together on your keyboard.

NOTE: In the 3D tools window, you're also able to change the color of your calibration points.

Validating your mesh

Once you are at your stage, you'll want to validate the mesh you've created. You should do this by measuring the calibration points with reference to the datum point. The Leica measurer is integrated in the Follow-Me iOS app specifically for easy calibration point and fixture measurement, which is explained in detail in [Measuring locations with Leica S910](#).

The reason you'll want to validate your mesh is to make sure that the calibration points you filled in in the Follow-Me software corresponds to the real life situation. Later in the process you'll want to hang-up a camera, and the mesh should then exactly correspond to the stage on the camera feed.

Calibration point groups

It is possible to make calibration point groups and hide those groups whenever necessary. Those groups will then no longer be taken into account in the mesh. This is most useful when an object on which the performers can stand is added or removed during the show - simply hide or unhide the calibration group for that object. Groups can also be masked, read more on this on the [Object Masking](#) page. To make a calibration point group:

1. In the 3D Window, select the calibration points you wish to assign to a group.
2. Press **Create CPGroup**, or go to the **Groups** sub-tab in the **Calibration** tab and press **Create Group from selected calPoints**
3. In the **Groups** sub-tab you can change the name of this group to something that makes sense, such as "Riser".

You can now hide/unhide this created calibration point group using the checkbox next to the group, or add extra calibration points to this group afterwards. Groups can easily be manipulated in terms of location and rotation in the 3D window. Groups are highlighted in the color yellow.

Calibration point groups can also be controlled through mappings, either by the Follow-Me operator or by the lighting console operator. Read more on user mappings at the page on [Mappings](#)

Calibration Points
Triangles
Groups

Calibration Point Group	Hide	Masking	Lock
Riser	<input checked="" type="checkbox"/> Hide	<input type="checkbox"/> Enable	<input type="checkbox"/> Lock
Stagedeck	<input type="checkbox"/> Hide	<input type="checkbox"/> Enable	<input type="checkbox"/> Lock

+ Create Group from selected calPoints —

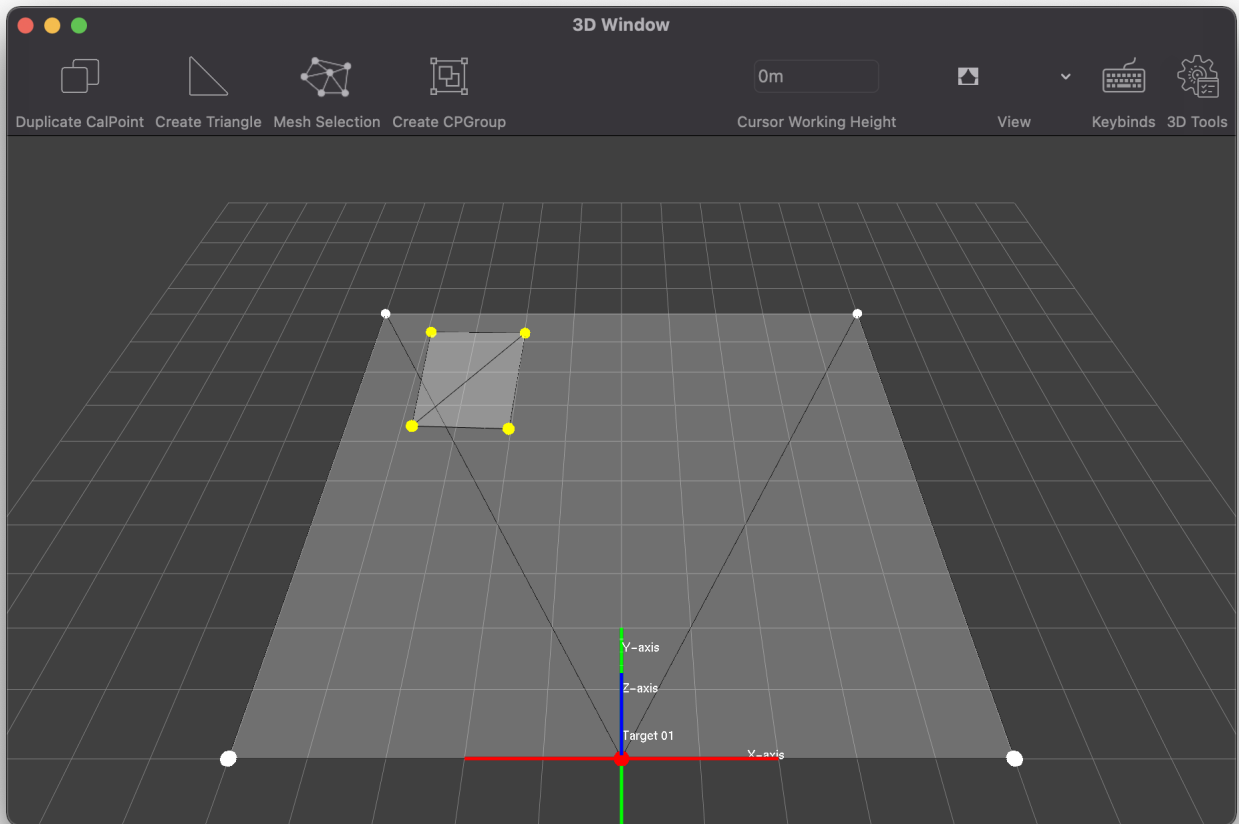
Calibration point group tools

Add selected calPoints to Selected Group

Make selected calPoint the origin of the Selected Group

Disable Mesh From Selected Group

Enable Mesh From Selected Group



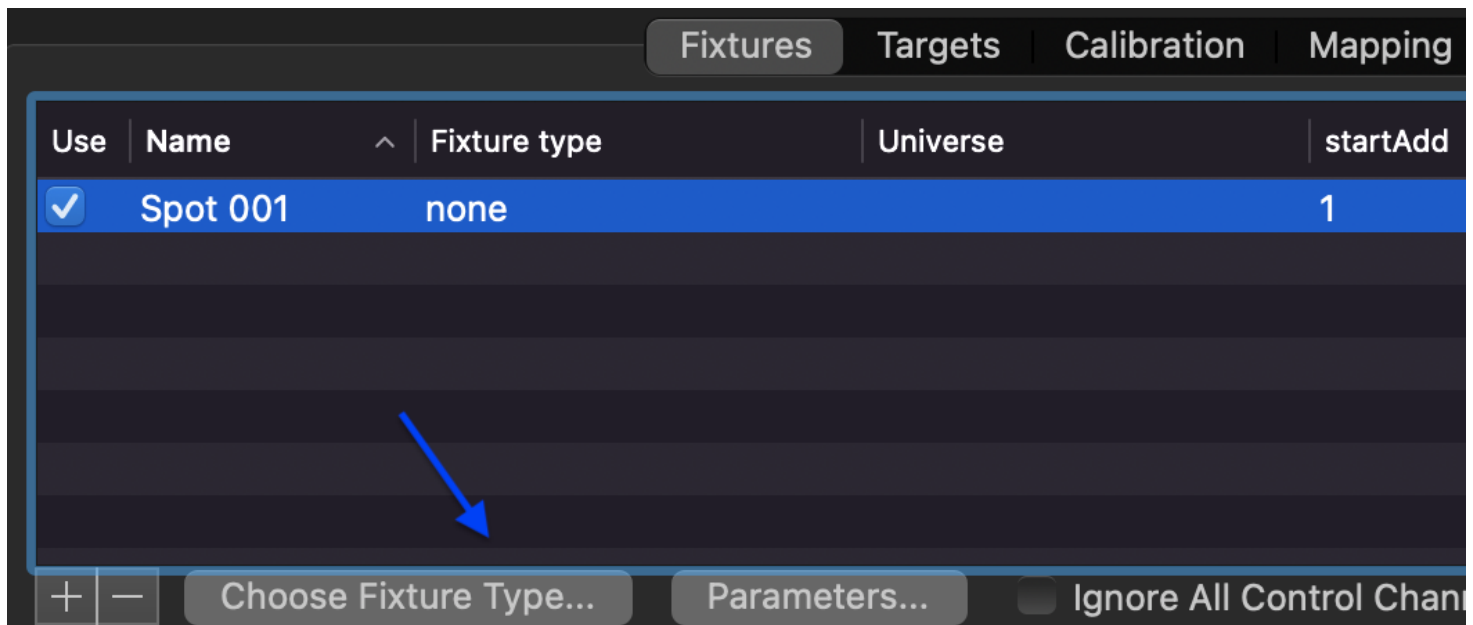
Adding fixtures and targets

Adding fixtures and targets

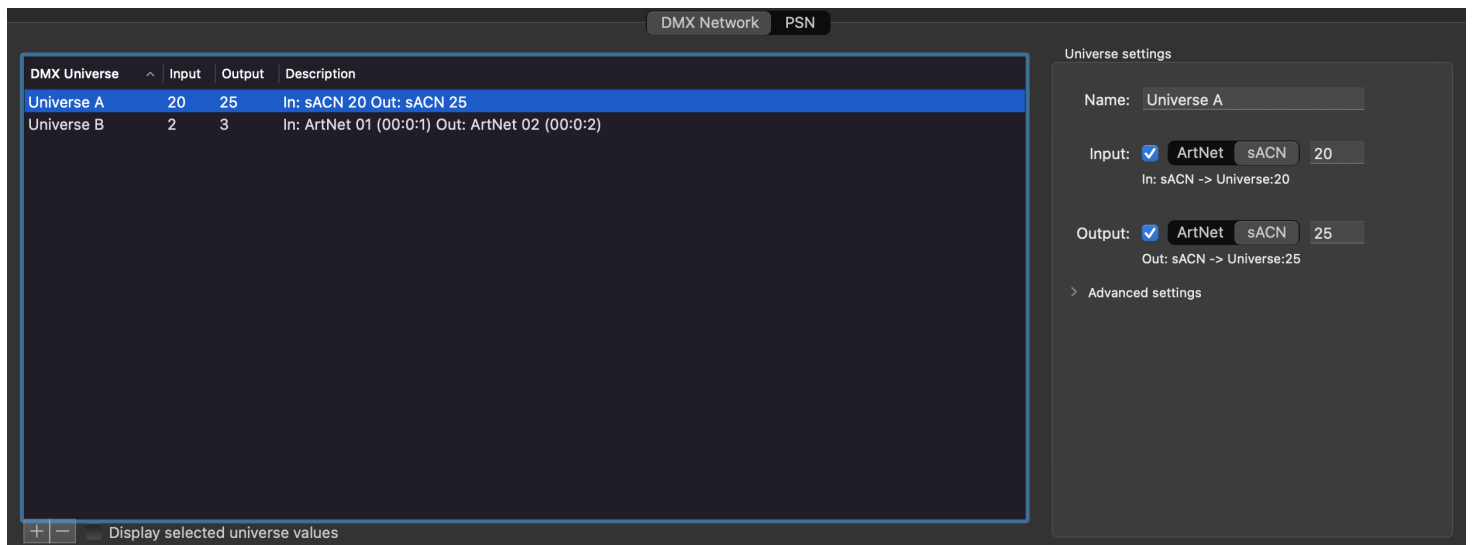
Follow-Me can utilize any fixture as a follow-spot. To do so, after we have set our mesh, we need to add fixtures to Follow-Me, and then add targets to control those fixtures.

Adding fixtures

1. Open the **Fixtures** tab in Follow-Me
2. Press on the **+** button underneath the fixtures table. Do this as many time as you have fixtures that you want to run through Follow-Me.
3. Having selected a fixture, press **Choose fixture type...** in order to select the type of that fixture in the Fixtures list. You can also select multiple fixtures at the time by using the **Shift** key.



4. For each fixture, depending on the way you want to merge, you will also want to specify its DMX Universe. Before being able to do so, we must create them in the **Connectivity** tab. Press the **+** button for each DMX Universe you wish to create. On the right side of the screen, specify whether they have an input universe, output universe, or both. You can specify whether this is ArtNet or sACN.



Follow-Me works by receiving the values of a fixture over the Input universe, after which those values are copied and certain parameters (such as Pan, Tilt and Zoom) are modified after which all values are sent to the Output universe. When a fixture is disabled for Follow-Me use, no parameters are modified at all, sending all the data straight through to the Output universe. Follow-Me can also be used standalone, in this case the Input universe is ignored.

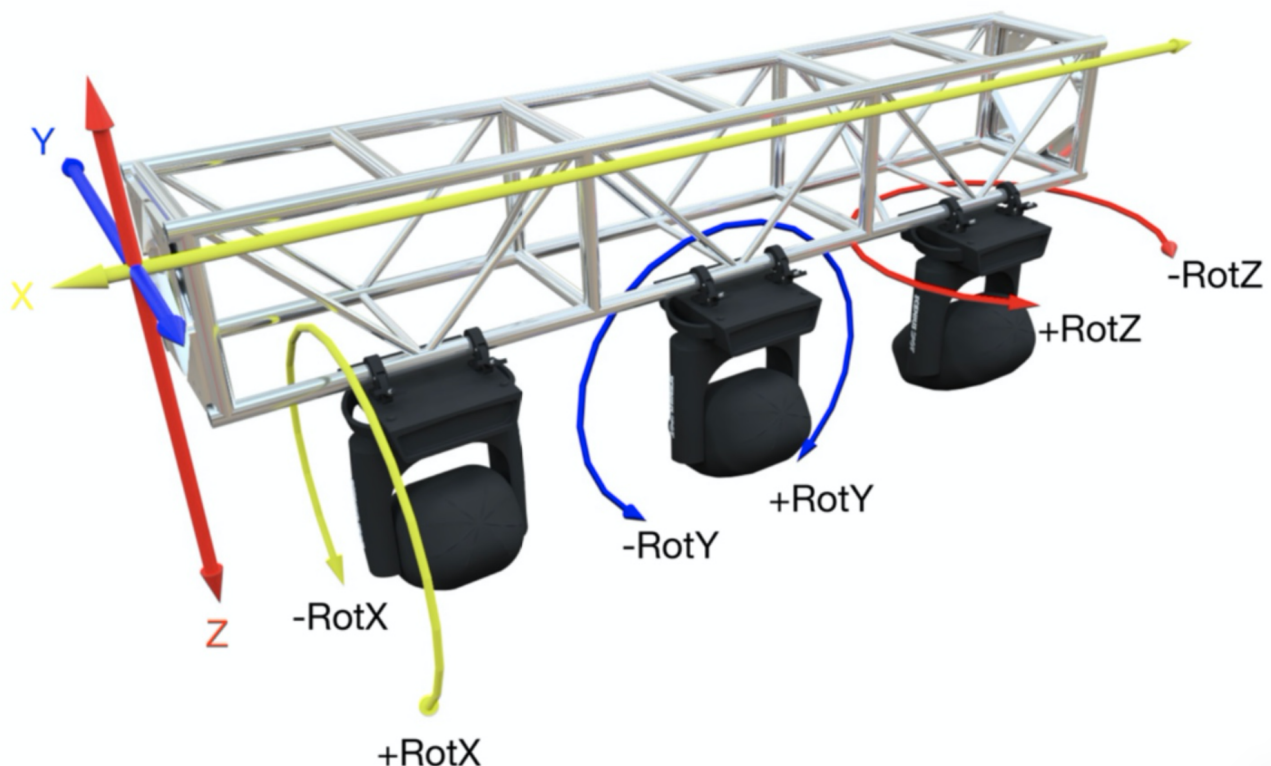
IMPORTANT: All the fixtures that have the same Output Universe should also have the same Input Universe, otherwise merging problems will arise.

5. Go back to the **Fixtures** tab. For each fixture, you can now specify the DMX universe previously created in the **Connectivity** tab. To address fixtures on a user defined address, select all the fixtures you want to address, select the **Addressing** tab under the fixtures pane and enter the starting address followed by enter.
6. Click **Renumber** behind the DMX Address and Follow-Me will re-address the selected fixtures.

Positioning fixtures

Having added these fixtures to Follow-Me, we'll now need to know their positions in 3D space. You can get this from your lighting plans or by measuring the x/y/z coordinates when the fixtures are mounted in the truss. For the z-coordinate it is important to measure to the tilt pivot point of the fixture as this is from where Follow-Me calculates the data. Measuring the fixture position can be best done using a laser distance measurer, like the Leica S910 which is integrated in the software. For more on this, read [Measuring locations with Leica S910](#). For all your fixtures, enter the coordinates of their actual position, referenced to your datum point. To do so:

1. Open the **Fixtures** tab
2. Fill in the fixture position for each fixture on the bottom left of the screen, according to the following rules:
 - xPos is the position on the X-axis (SR to SL axis) from your 0,0,0 to the fixture. Stage right (SR) is negative, Stage left (SL) is positive.
 - yPos is the position on the Y-axis (DS to US axis) from your 0,0,0 to the fixture. Downstage (DS) is negative, Upstage (US) is positive
 - zPos is the height to the tilt pivot point of the fixture in relation to your 0,0,0
3. You can also already fill in the orientation of your fixtures, being xRot, yRot and zRot. See the image below to understand what these values mean. These values, together with the position of the fixture, will also be calculated at a later stage in [Fixture refinement](#). You might also need to pan and/or tilt invert the fixture to make sure the fixture looks at the correct direction. You can change this on a fixture basis using the **Pan** and **Tilt** checkboxes.



IMPORTANT: The correct functioning / targeting is depending on accurate figures. The Follow-Me engine calculates fixture pan and tilt by referencing to these coordinates. Not entering these coordinates accurately will make Follow-Me incorrectly calibrated. However, do not worry if you mess up a few inches - we'll still refine the fixture position later, as explained in [Fixture refinement](#).

Importing fixture position data

You're also able to update fixture positions by using the **Update position from CSV** button. Before doing so, you must already add the amount of fixtures you wish to import in Follow-Me using the **+** button. You should have a CSV file with fixture position data, with data in the following order:

Fixture	X-position (meters)	Y-position (meters)	Z-position (meters)	X-rotation (degrees)	Y-rotation (degrees)	Z-rotation (degrees)
<i>Spot 01</i>	3.2	1.2	5.0	22.0	0.0	14.5
<i>Spot 02</i>

Please keep in mind the following:

- Make sure to name the fixture, the row will be skipped if the first column field is empty. The name itself is however not taken into account with importing.
- Only clean numbers are allowed: extensions like 'm' will not work.
- You can use a comma or a dot as decimal separator, depending on your system language and format setup on your machine.
- You can leave rotation info blank if you don't have this information.

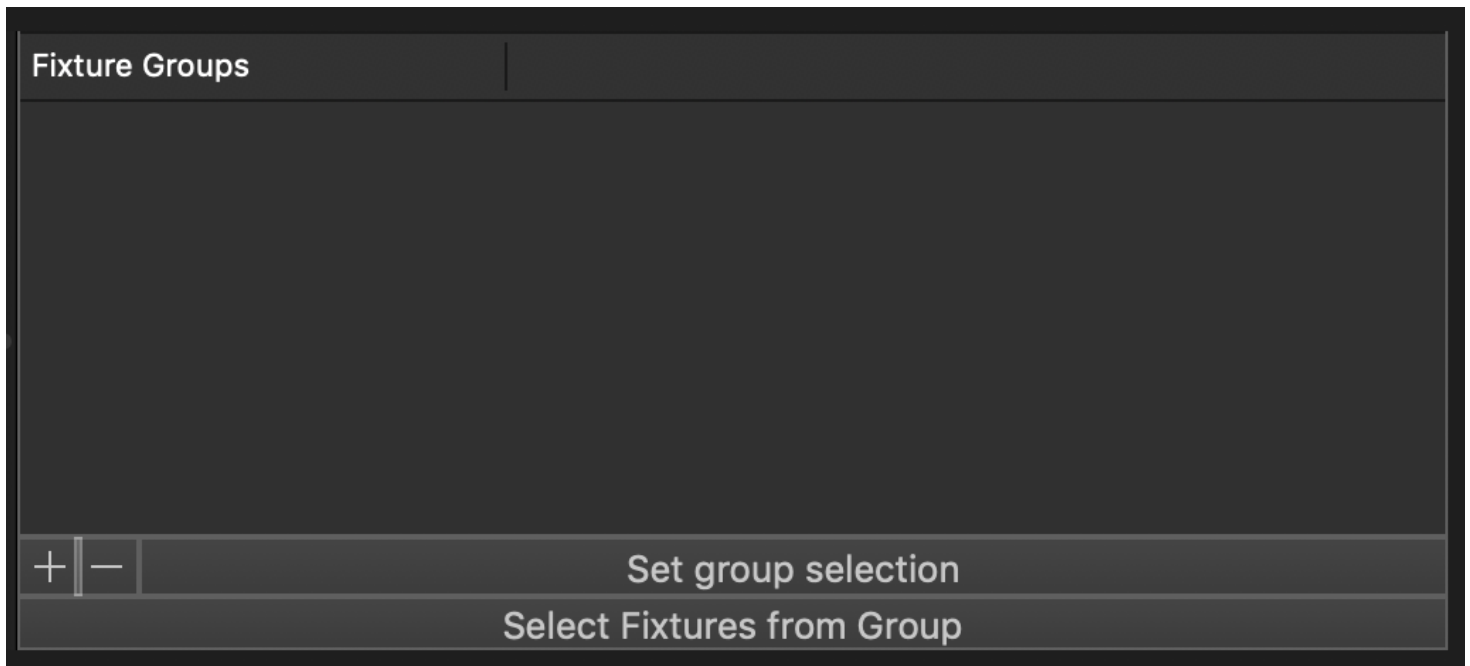
Note: You can only update fixture position from CSV if you already have fixtures in your Follow-Me show file.

Note: You're also able to export your fixture position data to CSV. Temporary deviation is also taken into account for this.

Creating fixture groups

In some cases you might want to select more fixtures at the same time. For example, when you have a truss with 4 fixtures used in Follow-Me. You can make your workflow faster by easily selecting them all at the same time instead of selecting the fixtures one by one. This can be done with fixture groups.

1. In Follow-Me, go to the **Fixture** tab and go to Fixture Groups.
2. Click the **+** button to create a Fixture group.



3. Select the Fixtures you want to put into a Fixture Group.
4. Click the **Set group selection** button.

You can always easily delete fixture groups by selecting the fixture group and pressing the - button below the fixture groups panel.

Adding targets

To be able to follow persons around with the recently specified fixtures, targets should be added to Follow-Me. Adding targets is straight forward: define them and attach fixtures to them. You can have more targets than operators, but you can only operate as many targets as you have operators. During a show you can switch consoles and targets, but it really depends on the show and the skill of the operator if that is advisable. Generally, you would have as many targets as you have consoles and operators. Or, if you're using Follow-Me TraXYZ, you would have as many targets as the amount of performers you are following for the show.

1. In Follow-Me, select the **Targets** tab
2. Add targets by pressing the **+** button in the bottom left
3. Double click on the targets and rename them as you like
4. The standard zHeight for a Target is 1.30m, this is for an average adult "chest height". If you have a significantly shorter or taller performer, you might want to change this value.
5. Attach fixtures to a target by selecting the fixtures you want to link to a target in the **Fixtures** tab, selecting the specific target in the **Targets** tab that you want the fixtures to link to, and pressing the button: **Assign Fixtures to Target**. In the operator screen, you can now see that you have assigned those fixtures to a target. You can also use the **Assign** button in the top of the Follow-Me window.

Changing target settings

There are a few additional settings you can change. These can be found below:

Define the target area

Define the area your target can move in. This could for example help with flipping of your fixtures. By default the area is defined as 25m in each direction from your 0,0,0 point. You can change these values in the **minXpos**, **maxXpo**, **minYpos** and **maxYpos** fields in the **Limits** sub-tab in the bottom of the screen. This is measured in the actual meters of your floor space based on your datum point.

Add an extra z-Offset

You are also able to add an extra Target zOffset, for when you want to increase and/or decrease the height of the beam on the performer during the show. Typical values would be **Negative zOffset** of -1,30 and **Positive zOffset** = 0,70, which lets the height of the beam range from 0m to 2m (with a default target zHeight of 1,30m). Changing zOffset can be mapped to a fader on the Follow-Me Fader Console, allowing the operator to change the height of where the beams cross during the show. This process is explained in [Console mapping](#).

Change crosshair preferences

In the **Crosshair** sub-tab you are able to indicate certain crosshair preferences. You can hide the text, use a higher contrast, change the size of the crosshair, make it hollow or transparent, change the orientation of the arrow or hide the arrow. You can also change the colour of your crosshair or reset it to default. You can also show target intensity or iris on the crosshair. All changes made here are saved in your showfile.

Continuous Beamsize

If you are planning on using the continuous beamsize function you can define the size of your beam for each target in the Beam Diameter field. This is discussed in more detail in [Continuous beamsize](#).

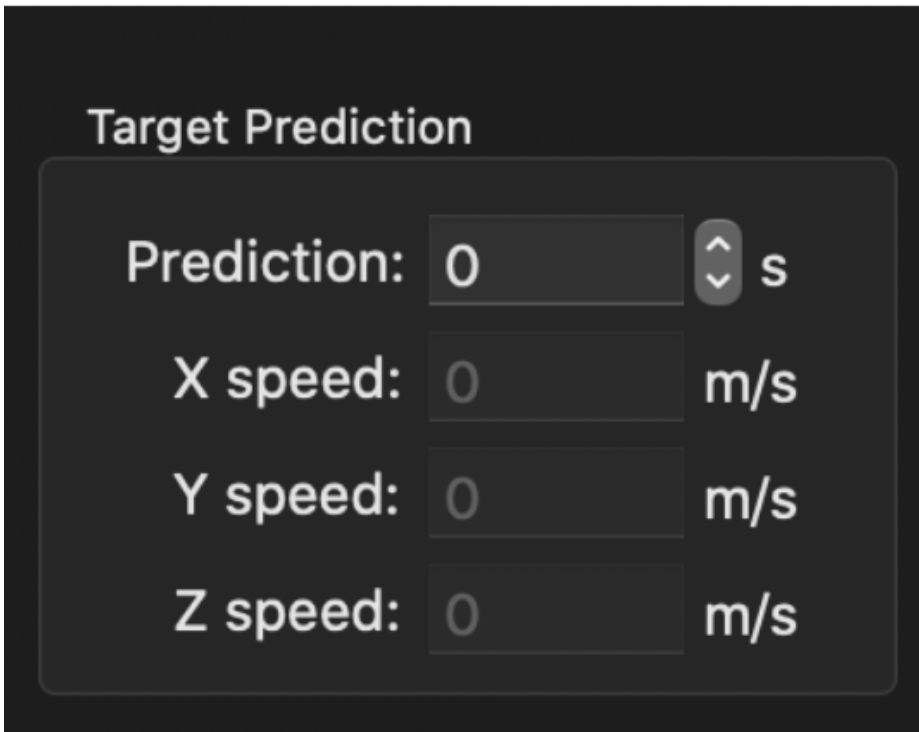
Set intensity, iris, zoom & focus from calibration

Finally, in the **Other** tab you can enable intensity, zOffset, iris, zoom and focus from Calibration. An explanation of how this works can be found at [Intensity, zOffset, iris, focus & zoom from calibration](#).

Target prediction

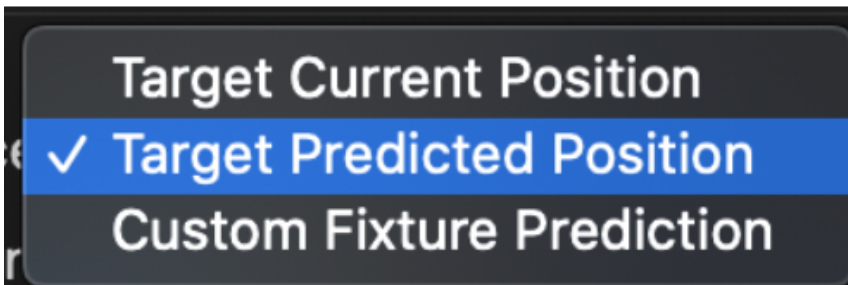
Follow-Me is able to calculate and predict the position of the target. This can be utilized if your fixtures fall behind the performer. To do this on a target-basis, do the following:

1. Go to the **Targets** Tab.
2. Open the **Other** tab.
3. Select the Target(s) you want to set the prediction for.
4. In the bottom you can set the amount of seconds you want to have for prediction. You can type the number in or use the arrows to choose the right value in steps of 0,05s (50ms)



Now we have set the prediction value for the targets. We now have to tell the fixtures they need to listen to the Target Predicted Position. Take the following steps to do so:

1. Go to the **Fixtures** tab.
2. Open the **Beam settings** sub-tab.
3. Select the fixture(s) you want to set the prediction to Target Predicted Position.
4. In the bottom you need to set the Prediction Source to **Target Predicted Position**.



To have target prediction shown in the 3D window and the Video window, make sure to check the **Display target prediction** checkbox in the **Calibration** tab.

NOTE: If you would like to have prediction on a fixture basis, check out the [Fixture prediction](#) page.

Setting up the camera

Setting up the camera

In this section, we'll go through how to connect the camera, and then calibrate your camera to the performance area.

Connecting the camera

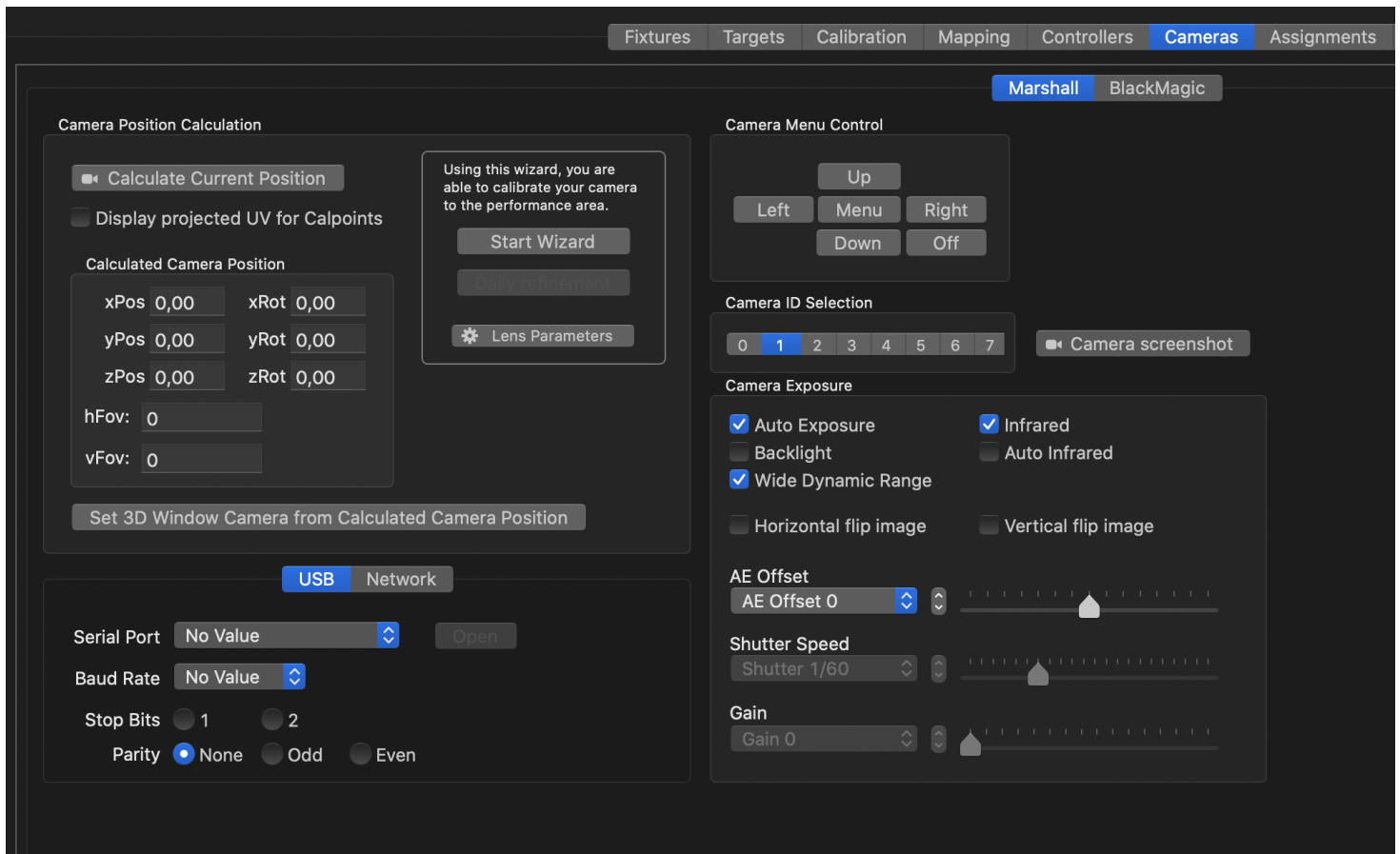
In order to operate the spots with a crosshair, you will need visual reference of the stage area. For this, you need a camera. We advise the Marshall CV502-M or the Marshall CV503 camera as these are supported in the Follow-Me software.

Connecting the camera is performed as follows:

1. Connect the camera to the Follow-Me Camera Box, as found in the video in [Setting up the hardware](#).
2. Power up the camera and connect the camera to the Blackmagic capture card, while connecting the Blackmagic capture card to the Mac.
3. Also attach the Follow-Me serial adapter if you want to be able to control the camera remotely.
4. Hang the camera that's on the Follow-Me Camera Box in the truss, where you have a good overview of the stage area, ideally with the camera hanging upside down.
5. Check the video input in the Blackmagic Media Express software by pressing "Log and Capture"; remedy if necessary.
6. Make sure to turn off image stabilization in the menu of the camera itself, and set Cam ID to "1" in the Display control menu. Through the camera menu you are also able to turn on mirror & flip if desired.

Then, open up Follow-Me to set-up the camera in the software:

1. Go to the **Cameras** tab in Follow-Me.



2. Make sure that the Camera ID is set to "1", or the corresponding value in the camera menu if you have multiple cameras.
3. After pressing **Start Cam** in the top of the screen, you should now be able to see the camera feed in the Video Window, instead of the Follow-Me logo.

Please make sure that the camera has a good overview of the stage area! This is important both for the operator as well as for the upcoming camera calibration.

Also make sure that image stabilization is turned off on your camera! This can be done in the *DIS* menu on the CV503 and the Image stabilization menu on the CV502-M.

In the **Cameras** tab you are able to change a variety of camera settings. This includes image flip, camera exposure, and the full camera menu. All options can only be utilized having a Follow-Me Serial Adapter connected.

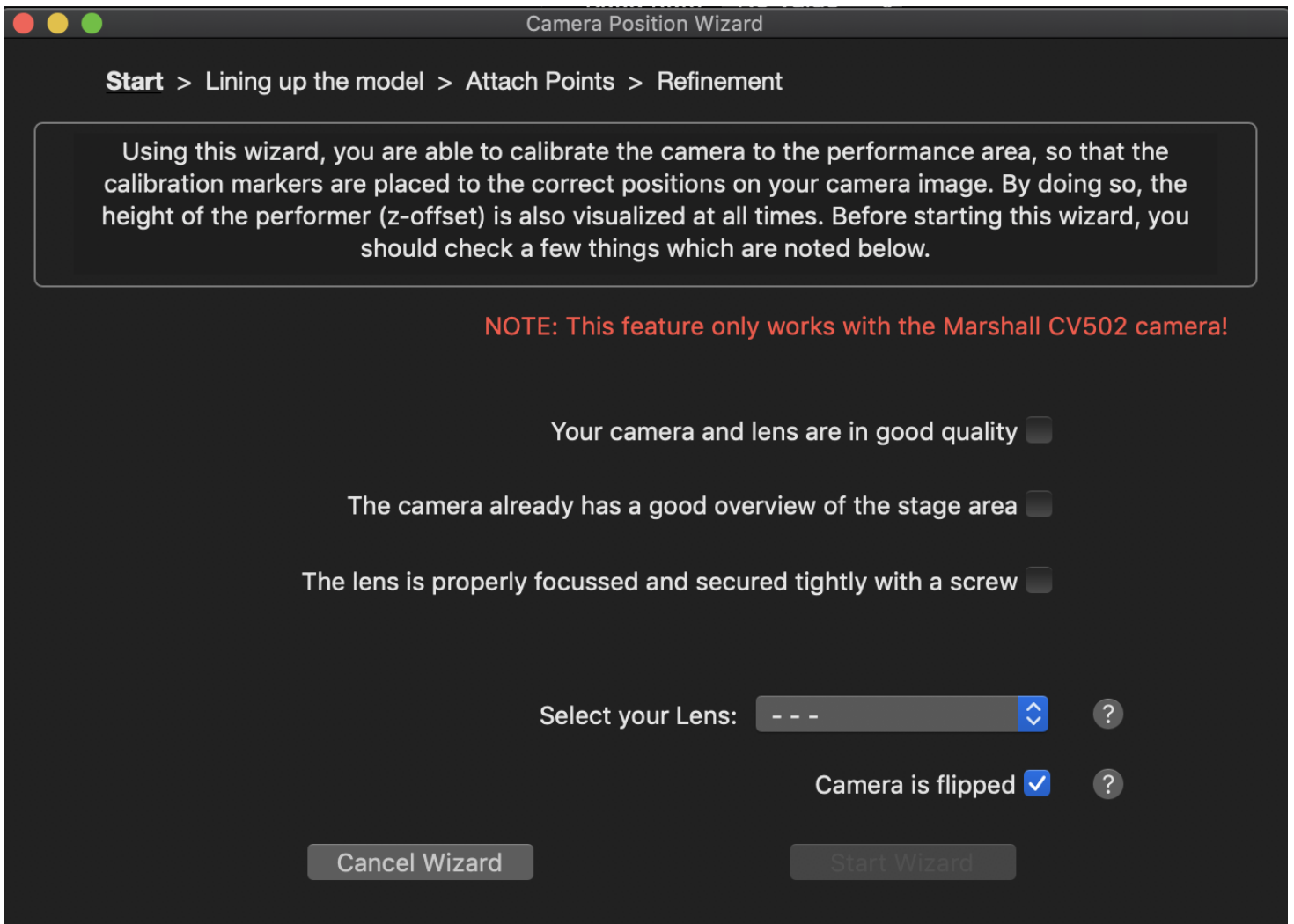
Calibrate camera to performance area

In order to visualise a crosshair exactly where the beams are going to land, you'll need to calibrate your camera to the earlier created 3D mesh.

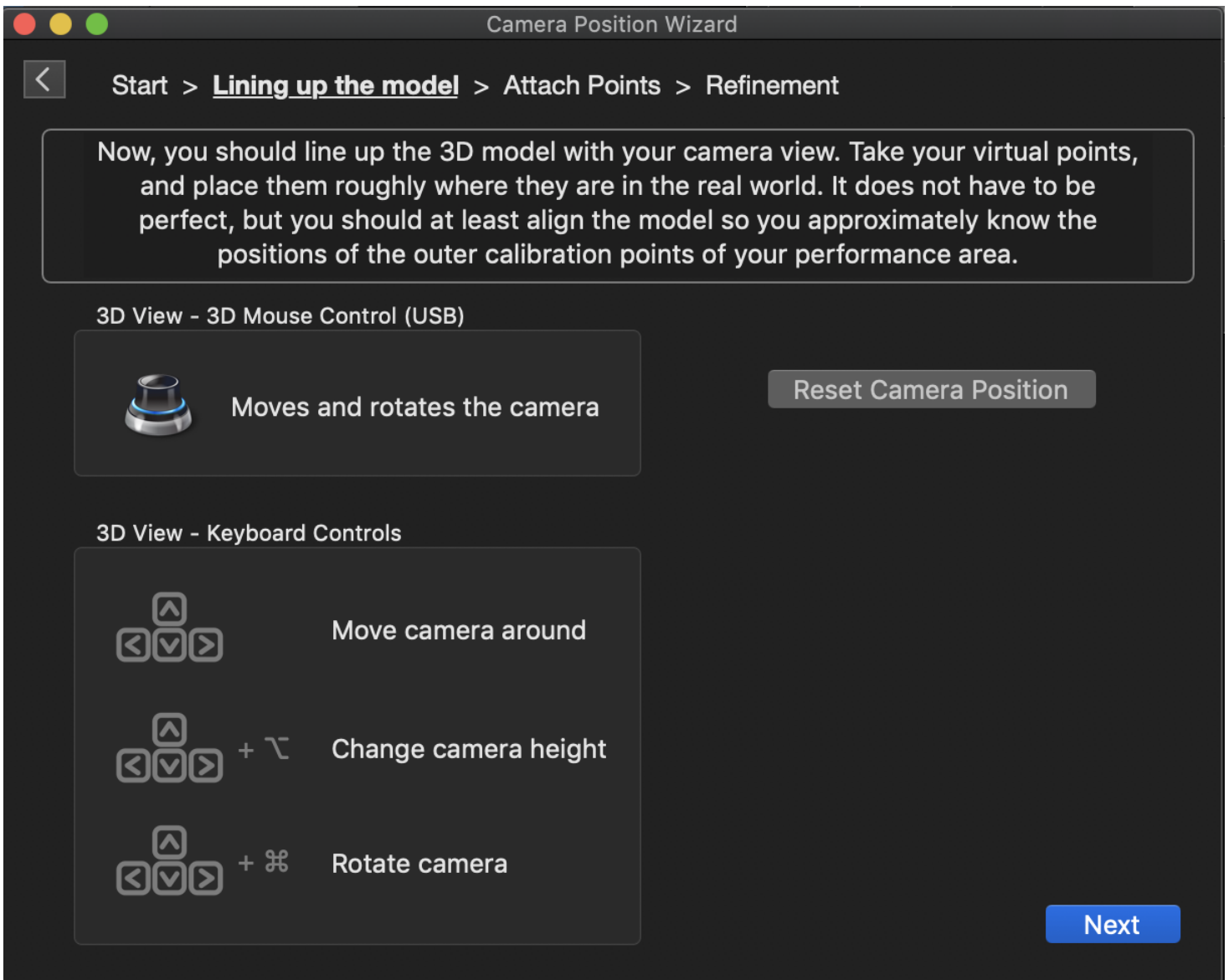
1. Open up Follow-Me, and go to the Cameras tab.
2. Under Camera Position Calculation, press **Start Wizard**

The screenshot shows a dark-themed interface for "Camera Position Calculation". At the top left is a title bar. Below it is a button labeled "Calculate Current Position" with a play icon. Underneath is a checkbox labeled "Display projected UV for Calpoints". A section titled "Calculated Camera Position" contains input fields for xPos, yPos, zPos, xRot, yRot, and zRot, all set to "0,00". Below these are fields for hFov and vFov, both set to "0". At the bottom of this section is a large button labeled "Set 3D Window Camera from Calculated Camera Position". To the right of the main panel is a separate box containing the text "Using this wizard, you are able to calibrate your camera to the performance area." Below this text are three buttons: "Start Wizard", "Daily refinement", and "Lens Parameters" (with a gear icon).

3. Read the instructions carefully as they're important for a successful calibration. Then, select the lens you are using, indicate if the camera is flipped or not, and press **Start Wizard**.



4. Your 3D View and Video View will now position itself next to each other. Again, follow the instructions in the wizard, which tells you to line up the 3D mesh on top of your camera view as good as possible. Use any of the controls indicated. When done, press Next.



5. You should now indicate at least 4 CamPoints used for calibration. Use as few CamPoints as possible for the camera calibration. At the bottom left of the wizard an advice on how many CamPoints to select is given. Ideally, these points are at the edges of the stage to improve calibration result. It is important that these CamPoints are placed on their positions on the camera feed with high accuracy. For this, you can use the magnifier tool that is on by default. Once you have set the camPoints to their correct location, press **Calculate** and Next to **continue**.

NOTE: If you want specific points not to be reprojected, for example if they are outside of the camera view, make sure to **Pin** those points. Ideally, no points should be outside the camera view. But if there is no choice, go to the **Calibration** tab, check the **Pin** checkboxes for the calPoints that should not be reprojected and drag those points in the wizard as close to where they should be.

Camera Position Wizard

Start > Lining up the model > **Attach Points** > Refinement

Finally, you should attach the points that correspond to the outer edges of the stage. Indicate that a point can be used for camera calibration by checking the "Cam"-checkbox. CamPoints are indicated in red on the camera view. Place them on the right location. Please double-check whether the placement is accurate.

Indicate selected CalPoints as Cam Use Magnifier during dragging

In...	Calibration Points	xPos	yPos	zPos	Cam	Notes
1	cp001 - Origin	0,00	0,00	0,00	<input type="checkbox"/>	
2	cp002 - DSR	-5,00	0,00	0,00	<input checked="" type="checkbox"/>	
3	cp003 - DSL	5,00	0,00	0,00	<input checked="" type="checkbox"/>	
4	cp004 - USR	-5,00	10,00	0,00	<input checked="" type="checkbox"/>	
5	cp005 - USL	5,00	10,00	0,00	<input checked="" type="checkbox"/>	

5 Calibration points in total

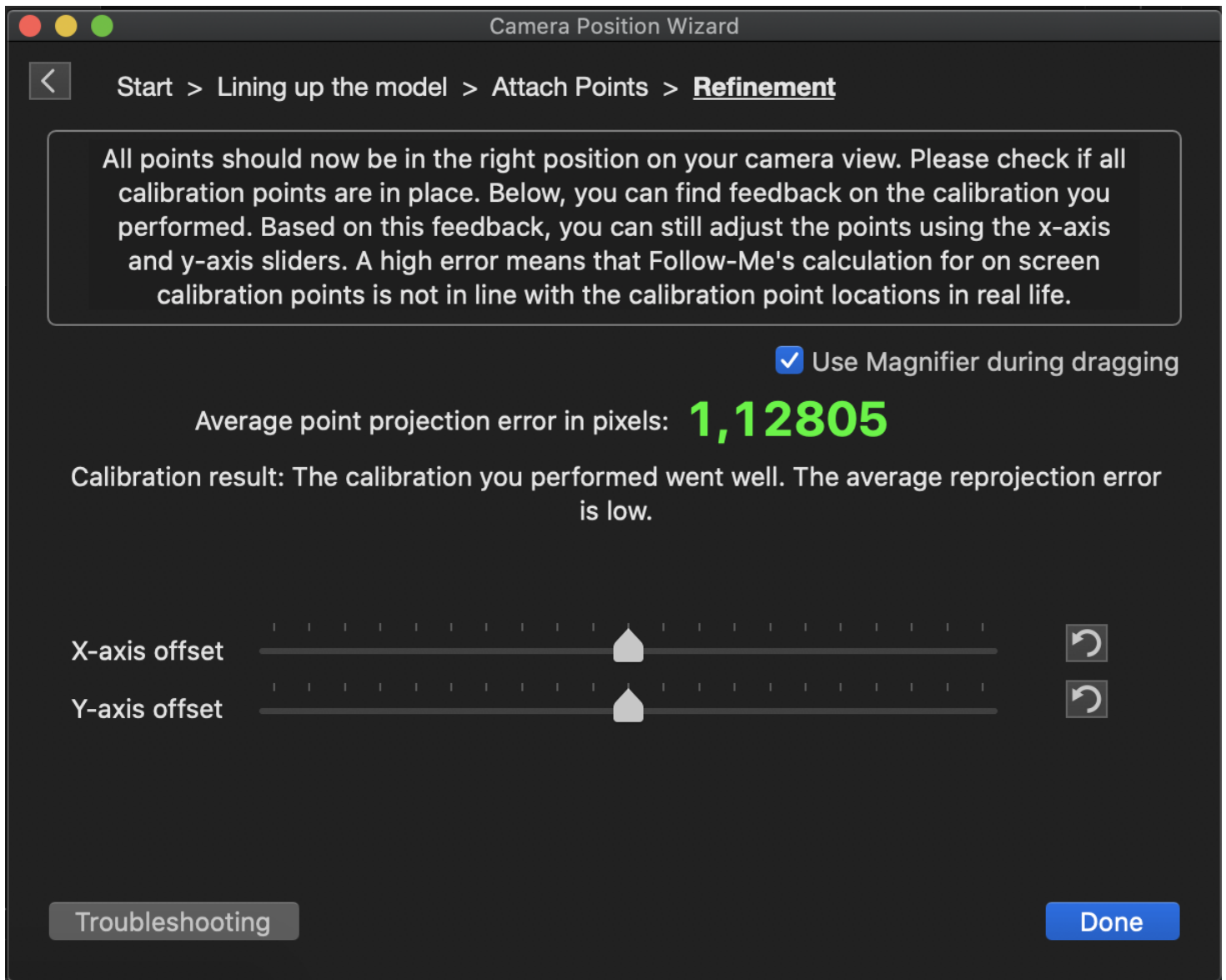
4 CamPoints selected for calculation

4 CamPoints are advised for calculation

Calculate

Next

6. In this last screen you are provided with the results of your calibration. The value you see is the *average pixel error there is between the given CamPoint location and the calculated location*. The software provides feedback on the performed calibration. As long as this is lower than 5 the calibration likely went well. You can still play with the offset sliders in order to perfect the result.



After having performed camera calibration, any added or changed points will directly be changed on the video window as well, which means you won't have to go through the wizard again once you have added or modified calibration points.

NOTE: Ideally, use as few CamPoints as possible for the camera calibration, as too many CamPoints can provide false positive calibration results.

Troubleshooting

Camera calibration is a very powerful tool, but this also means that any small mistakes made can have large effects on the quality of your calibration. A variety of things might have gone wrong if calibration does not look good:

The CamPoints have been incorrectly placed

Either one or more of the points was placed in the wrong spot or one or more points did not adhere to their x,y,z location. Double-check if the CamPoints are correctly placed.

The wrong lens was selected in the beginning

Check again that the lens selected is the actual lens you're using.

Measurements of the calibration points in world coordinates are inaccurate.

Please check if all calibration points are measured correctly.

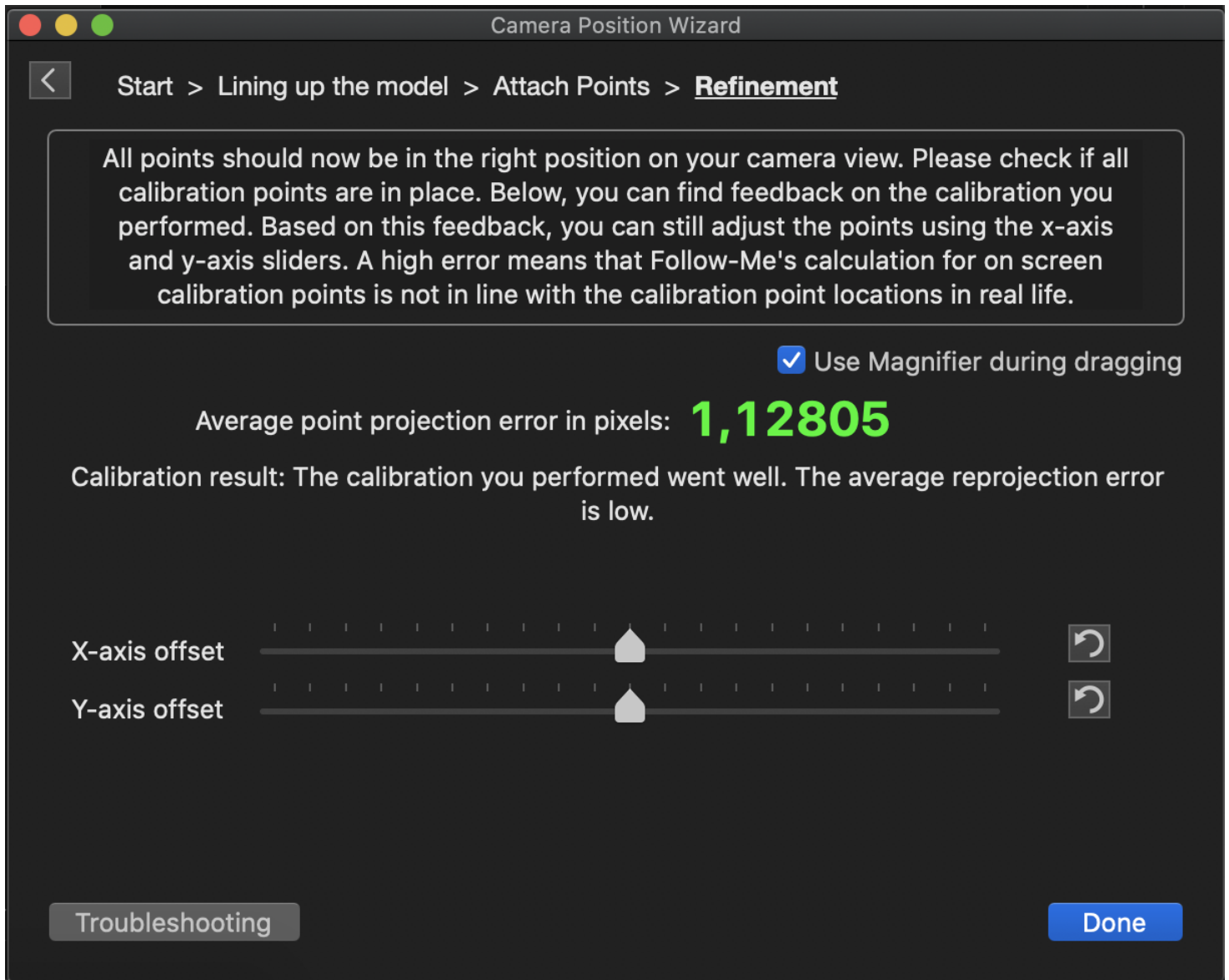
If all of the above has been checked, there could be some inconsistency in your camera or lens. We then suggest acquiring a new Marshall CV502-M or CV503 camera. In the future, if desired, you can calibrate your camera/lens-

combination yourself, to see if the results improve.

Camera calibration refinement

When you have already successfully set-up Follow-Me before but your show is changing its location, the camera has likely changed position. In this case, you will not have to go through the entire camera calibration wizard again - all you'll need to do is refine your calibration.

1. Go to the **Cameras** tab, and press the **Daily refinement** button in the Camera Position Calculation box.
2. Drag the CamPoints back to their corresponding positions on the video window. Whilst doing this, the point projection changes happen in realtime.
3. Keep an eye on the average point projection error in pixels and make sure this value is below 5.0. Use the sliders in case some x-axis or y-axis offset is needed. Once you're satisfied with the result, press Done.



You can now check your Target crosshair on the Video window to make sure that everything is calibrated correctly. The target crosshair on the video window shows a horizontal line at the floor level, and at the base zOffset level of your target. The crosshair will be at the correct height over the camera image when the camera is correctly calibrated.

Fixture refinement

Fixture refinement

Fixture refinement can be performed to refine the positioning and orientation information of your fixtures in Follow-Me. This will help to get the beams spot on on your performer.

Before starting fixture refinement, we need to make sure that the beams of our fixtures are already aimed at the performance area, and that the fixtures follow the movement of the Follow-Me target crosshair. This process depends on whether Follow-Me is used standalone or merged in a lighting console.

Preparation (standalone)

Go to the **Fixtures** tab. Turn on a fixture by selecting a fixture, pressing **Use** to see if the fixture has the shortest route to the Follow-Me target. If that is the case, we can move on to the next fixture. If it isn't the case, we need to change the X Y Z rotation values of the fixture and/or change pan and/or tilt invert of the fixture. Keep modifying this and selecting/deselecting **Use** to see if the shortest route is accomplished. The beam location ofcourse doesn't have to be 'perfect' as we still have to perform the fixture refinement. Once we have the shortest route to the target for each fixture, we can start the actual fixture refinement.

Preparation (merged with lighting console)

Follow these preparation steps when Follow-Me is merged with a lighting console:

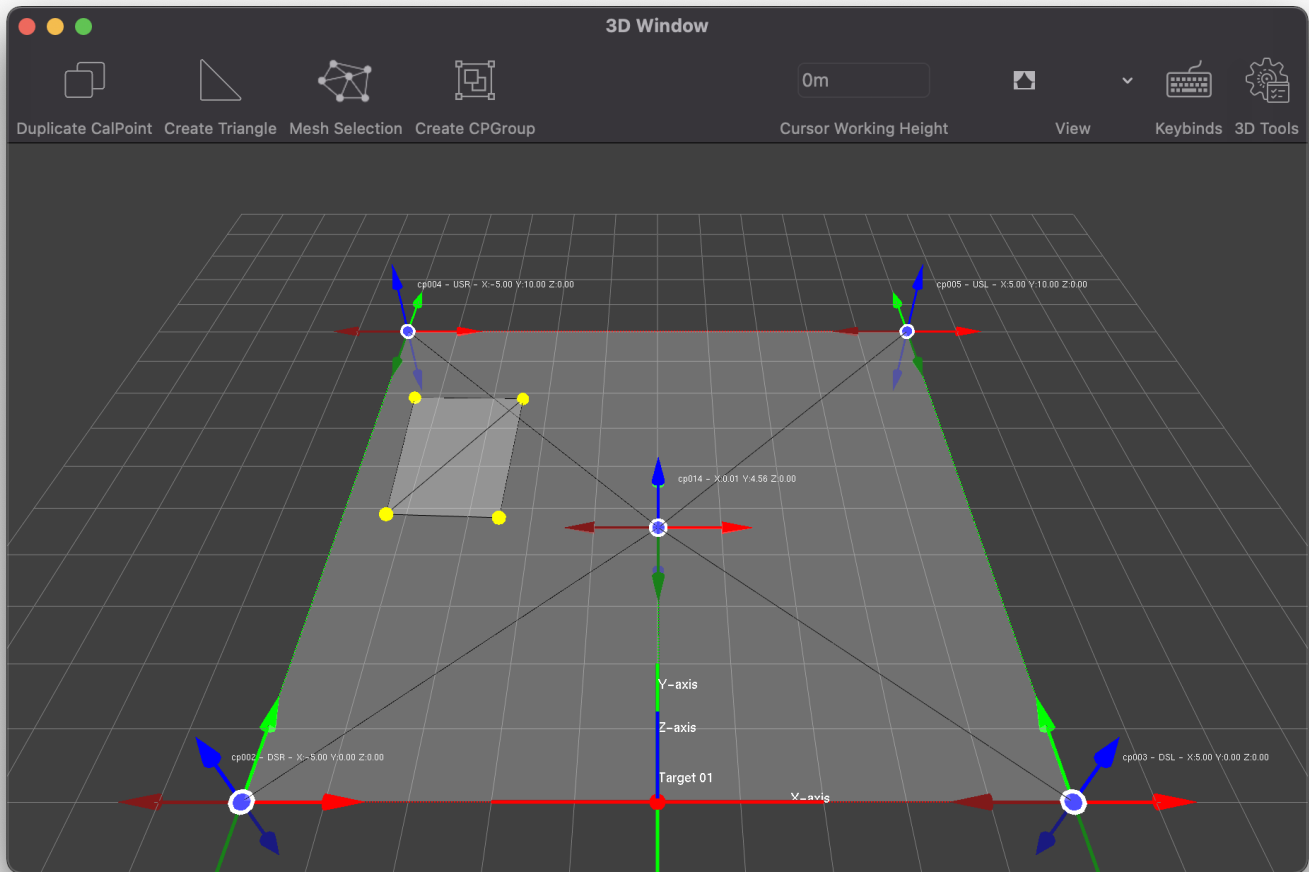
1. Make sure you have done all pan/tilt inverts for all your fixtures in the lighting console.
2. Set all the fixtures you want to use through Follow-Me to their home position (pan 50, tilt 50), to have all fixtures hung straight down.
3. Go to Follow-Me, and press the **Ignore all control channels for all fixtures** button.
4. Now in the **Fixtures** tab, turn on a fixture by selecting a fixture, pressing **Use** to see if the fixture has the shortest route to the Follow-Me target. If that is the case, we can move on to the next fixture. If it isn't the case, we need to change the X Y Z rotation values of the fixture and/or change pan and/or tilt invert of the fixture. Keep modifying this and selecting/deselecting **Use** to see if the shortest route is accomplished. The beam location ofcourse doesn't have to be 'perfect' as we still have to perform the fixture refinement. Once we have the shortest route to the target for each fixture, we can start the actual fixture refinement.

Performing fixture refinement

To do the fixture refinement, perform the following steps:

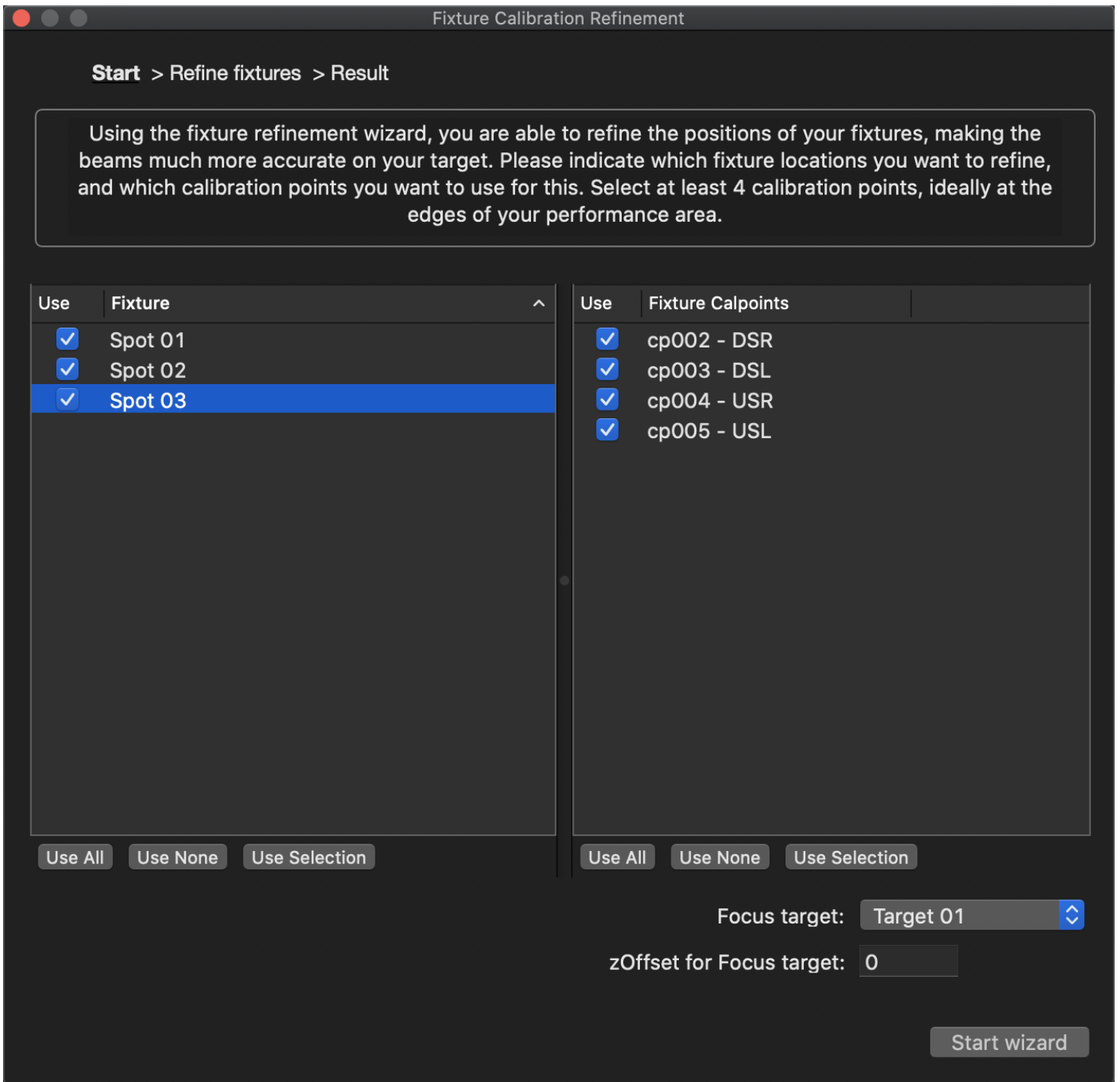
1. Set at least 4 points on as fixture points in the Follow-Me software. For this, go to the **Calibration** tab and indicate which calibration points should function as fixture points, by checking the **Fixt** checkbox for those calibration points. Ideally these points are near the edges of your performance area. See the following example for an idea on well-positioned fixture points:

EXAMPLE: In this example, we have a basic stage of 5 calibration points + origin. We always want to try to go for outer points on our mesh for solid fixture position refinement results, and for redundancy purposes we also take the middle point. See the image below



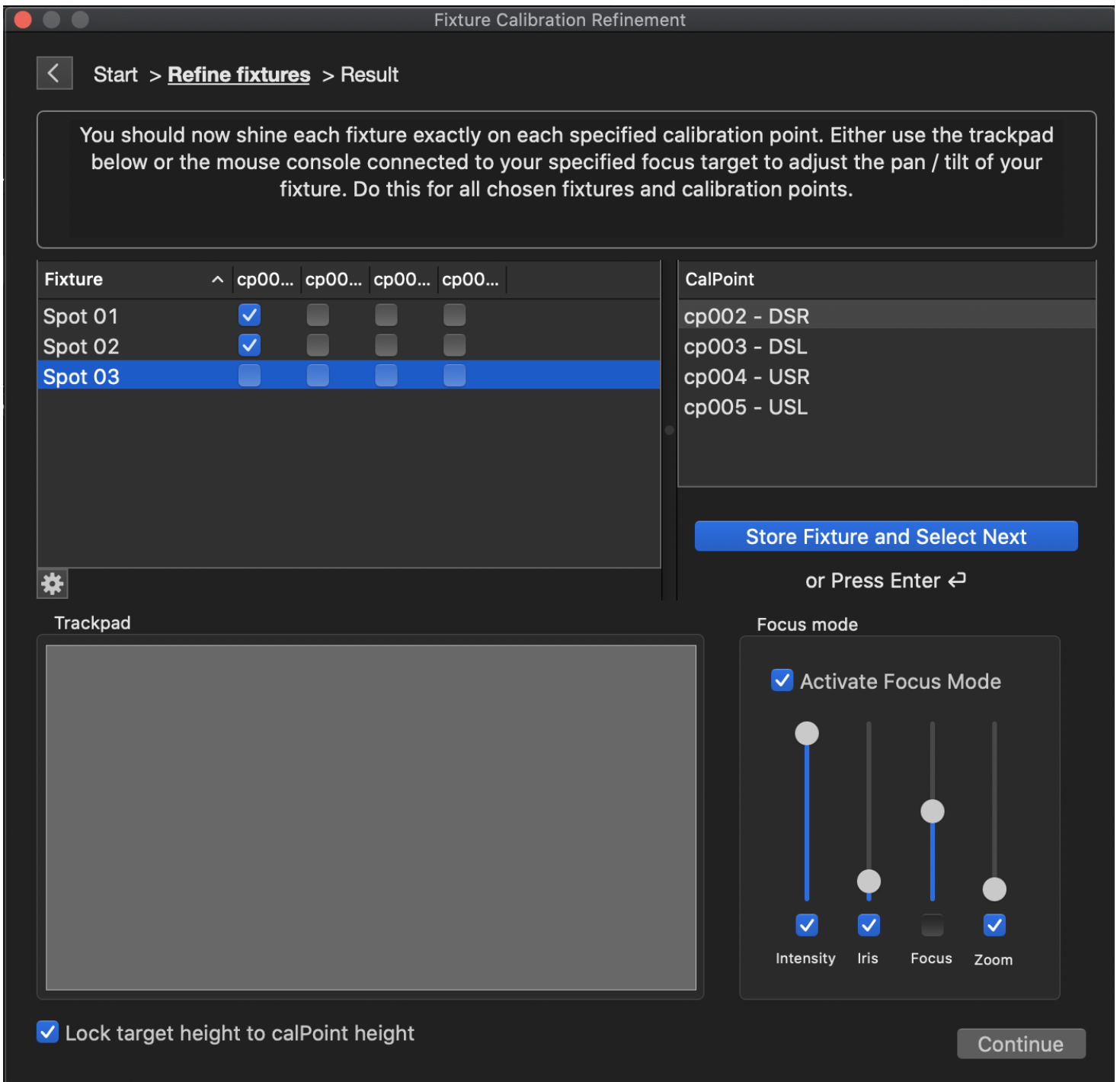
2. In the **Fixtures** tab, press the **Fixture Refinement Wizard** button in the bottom right. This will open a wizard that will take you through fixture position refinement. Please read the text carefully. First, select the fixtures you want to refine. Second, select the calibration points you want to perform fixture refinement for. Once you have selected fixtures and calibration points for fixture refinement, you need to select a focus target that'll be used for this. You can fill in a zOffset for this target if desired, which is typically set to 0. Press **Start wizard** to continue.

WARNING: Please note that for the fixture refinement to work correctly, your chosen fixture calibration points must be within the tilt range of your chosen fixtures! Please use other points if this is not possible for your chosen fixtures.



- The next screen will open, explaining that you need to now aim each fixture on the specified calibration points. To begin this process, press **Start Refinement**. This will aim your first fixture at your first calibration point, and highlight this point on the 3D view and camera view. Either use the trackpad below or the mouse console connected to your specified focus target to adjust the pan / tilt of your fixture. In the bottom right of the wizard you can change focus mode parameters such as focus and zoom, to get your beam as tight as possible. Once the beam is positioned on the calibration point in real life, press the **Store Fixture and Select Next** button. You can also press the Enter button on your keyboard. The next fixture will now aim at the calibration point. Do this process for all chosen fixtures and calibration points.

NOTE: By default, the checkbox for **Lock target height to calPoint height** is checked. This means that the target height will always automatically be set to the height of the specific calPoint it is focussing on. If you for example have a calpoint upstage at Z=1, the target height will be set to 1.0 for that calPoint as well.



4. When you're done, you'll see the message "DONE - Last fixture calibrated". Press the **Continue** button to finish the refinement.
5. Finally, you'll see a screen providing you with the results of your fixture refinement. Ideally, the result values should be between 0 and 5. Press Done to finish the fixture refinement wizard. This will set your target z-Offset back to what it was before starting the wizard. You're also able to add more calibration points for fixture refinement if you're not fully satisfied with the result. Press **Back to Selection to add more points** to do so, or simply restart the fixture refinement wizard.

From now on, you're able to see fixture refinement results by pressing the **Fixture Refinement Result** button in the bottom right of the **Fixtures** tab. If desired, you can delete specific fixture - calibration point combinations from the fixture refinement, in order to restart the fixture refinement wizard with new values.


In temporary deviation, you will see the change of position and orientation Follow-Me calculated with regards to the values you filled in earlier for fixture position and rotation.

NOTE: If you get strange values for one or multiple fixtures, you might need to select pan and/or tilt invert for these in the **Fixtures** tab. After doing so, go to **Fixture Refinement Results** and let Follow-Me recalculate the position and orientation of the fixture.

Every time you're at a new location with the same show, make sure to perform the fixture refinement. Follow-Me will then recalculate the position and orientation of your fixtures so that the beams will be spot on once again. When you've already performed a fixture refinement, you will overwrite the existing values. Follow the steps in the fixture refinement wizard to do this correctly. The fixture refinement wizard indicates minus signs for fixture/calpoint-combinations that already have a value and can be overwritten when desired, see image below.

Fixture	^	cp00...	cp00...	cp00...	cp00...
Spot 01		-	-	-	-
Spot 02		-	-	-	-
Spot 03		-	-	-	-

When you want to do the fixture refinement wizard again with different calpoint/fixture combinations, you might get the following message:



NOTE, this showfile has fixture refinement values for other calPoints than selected

Are you adding more points to the refinement then please continue, otherwise select clear the old information to start fresh for these fixtures

If you want a fully fresh start, you should click **Clear old values**. If you want to refine with extra calPoints and keep the old values, select **Continue refinement**. You're always able to manually remove entries by going to the **Fixture refinement result** window.

Mouse & Fader Controller mapping

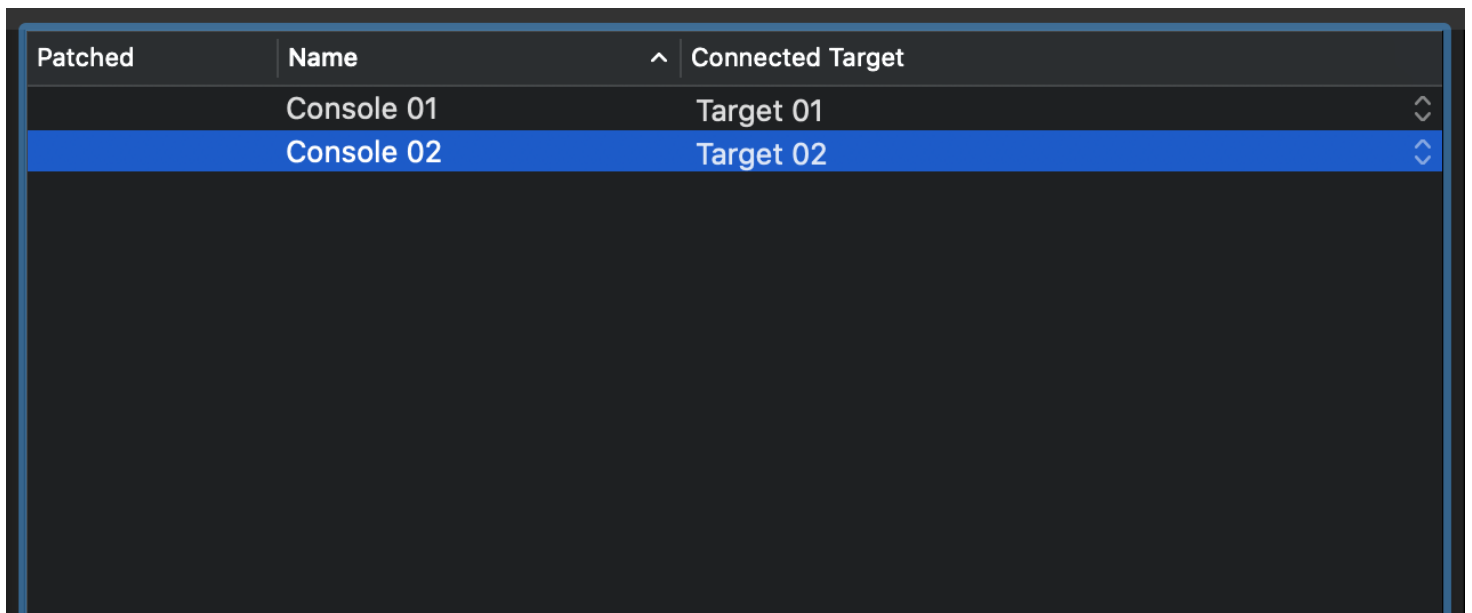
Mouse & Fader controller mapping

In Follow-Me, you're able to map your controllers to your desired preferences. You can map things such as fixture parameters, Follow-Me actions, Follow-Me assignments, camera exposure and target zOffset.

You can already pre-map your controllers before having them connected over the network to your Follow-Me system.

Adding controllers & default mappings

1. Open the **Controllers** tab in Follow-Me.
2. Add the amount of mouse consoles you have by using the **+** button in the bottom of the middle table. As you can see, the consoles are still unpatched as they are not linked yet to a physical mouse console.
3. If desired, you can already connect a target to the console by clicking on the **Connected target** dropdown menu. Select the target you wish to connect.



Patched	Name	^	Connected Target
	Console 01		Target 01
	Console 02		Target 02

Now, it's time to add mappings to the created controllers. In Follow-Me, we distinguish between default mappings and custom mappings.

- Default mappings are the most used mappings that will affect the target connected to the selected console. This for example includes Target Intensity, Target Iris and Target zOffset. It also includes console mouse sensitivity, general camera mappings for camera exposure and the ability to enable or disable a PSN tracker.
- Custom mappings have to be created in the **Mappings** sub-tab - these mappings provide you the freedom to perform actions on multiple targets or multiple fixtures at the same time. Custom mappings can also be used to map presets and assignments to the mouse and fader console. Created custom mappings will be available in the **Controllers** tab once created.

To add a default mapping, perform the following steps:

1. Press the dropdown menu for one of your chosen channels on the right side of the screen.
2. Select the mapping you want to assign to the channel, and do so for each channel you want to map.

By default, every controller has the default mouse sensitivity mapping mapped to encoder E1 on the mouse controller. This can be modified if desired. A typical mapping set-up can be found in the image below.

Once you've added all your default mappings to a local controller, you can duplicate these default mappings to another controller by pressing the **Duplicate selected** button in the bottom middle of the screen. This will duplicate the selected controller's default mappings to another local controller.

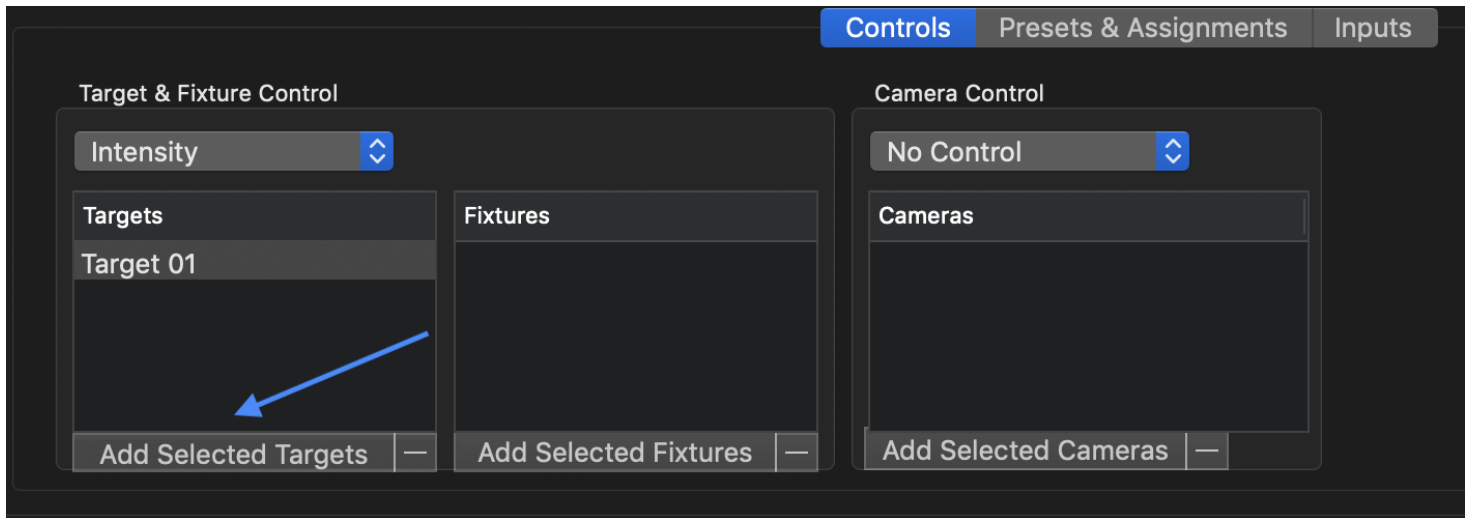
Creating user mappings

Now if we also want to add custom mappings to the console, perform the following steps:

1. Open the **Mapping** tab in Follow-Me.
2. Use the **+** button to add a mapping. This will add a Mapping 01 onwards. You can rename this by double clicking on the mapping you want to rename. Make as many mappings as you want attributes to be mapped.
3. In the **Controls** sub-tab, you can find many parameters that can be mapped. Pick one, for example **Intensity**, and add selected targets by pressing **Add selected targets**. You can also do this on a fixture basis by pressing **Add selected fixtures**. Additionally, you can also map camera control parameters, as well as presets and assignments.

You can also make mappings for specific fixture parameters such as CTO if desired. To do so, follow the above steps and press the **+** button in the bottom right of the **Controls** sub-tab. Add the parameter per spot by selecting the spot, selecting the parameter and clicking **Add >>**. This will move the parameter to the Mapped Parameter column. Repeat this step for every fixture you want to include in this mapping.

NOTE: The mapping for fixture parameters are based on a fixture basis, NOT a target basis. Even though a Follow-Me controller might be connected to Target 01, the mapping will also control the fixture parameters for fixtures connected to a different target. The same principal applies for gobo's, frames, animation wheels and so forth. If you desire to control the parameters mentioned above on a target basis the use of an external lighting console is advised.



Alternatively, you can use a preset or assignment as a mapping in the **Presets & Assignments** sub-tab. Next to this, you can create mappings to toggle hide a calibration point group or offset its position in the **Calibration point groups** sub-tab.

Now that you've created your custom mappings, you still have to bind them to specific faders or encoders on your Follow-Me consoles. To do so, follow these instructions:

1. Go to the **Controllers** tab.
2. Select the console you wish to assign mappings to. You'll get to see a channel list on the right side of the screen.
3. Select the channel you wish to assign a mapping for. On your mouse and fader consoles you can also see the abbreviations per button, such as E1 and F2.
4. Finally, select the mapping you want to assign in the custom mappings field. You have assigned a mapping to a button on your mouse or fader console. Keep following step 3 and 4 to assign more mappings to your consoles.



Patching the controllers

Now that you've finished mapping your consoles, it's time to patch them to a physical Follow-Me Mouse Console and Fader Console. Connect your mouse consoles to the PoE switch, and connect your fader consoles to your mouse consoles.

1. Open the **Controllers** tab.
2. Make sure to select the correct network interface in the top left so that the physical controller on the network are identified. You should now see a list of the found controllers on the network.
3. Select a controller on the network, and select the prepared console on the right.
4. Press the **Patch >** button to patch the controller to the selected console.
5. Now the controller will be able to use all the mappings prepared. Repeat step 3 and 4 for each controller on the network.

NOTE: You can always unpatch a controller by selecting it and pressing the **Unpatch** button.

Additional console settings

Additionally, you can also change the controller sensitivity, minimum sensitivity, maximum sensitivity, sensitivity step size and deadzone for each of your controllers. This can be modified by selecting a controller and changing the parameters in the bottom of the **Controllers** tab.

Another feature is **Auto select Target from Console ID**. Ticking this checkbox make the selected console automatically select targets based on the selected console ID, as long as this target is not connected to another console. If you want the controller to force the target to connect from console ID, even though another console is mapped to the respective target, the checkbox **Force target connect** can be ticked. This is not recommended during show conditions.

Controller Settings

Sensitivity: ?

Deadzone: ?

Boost:

Min/Max Values

minSens:

maxSens:

stepSize:

Assignments & presets

Assignments & presets

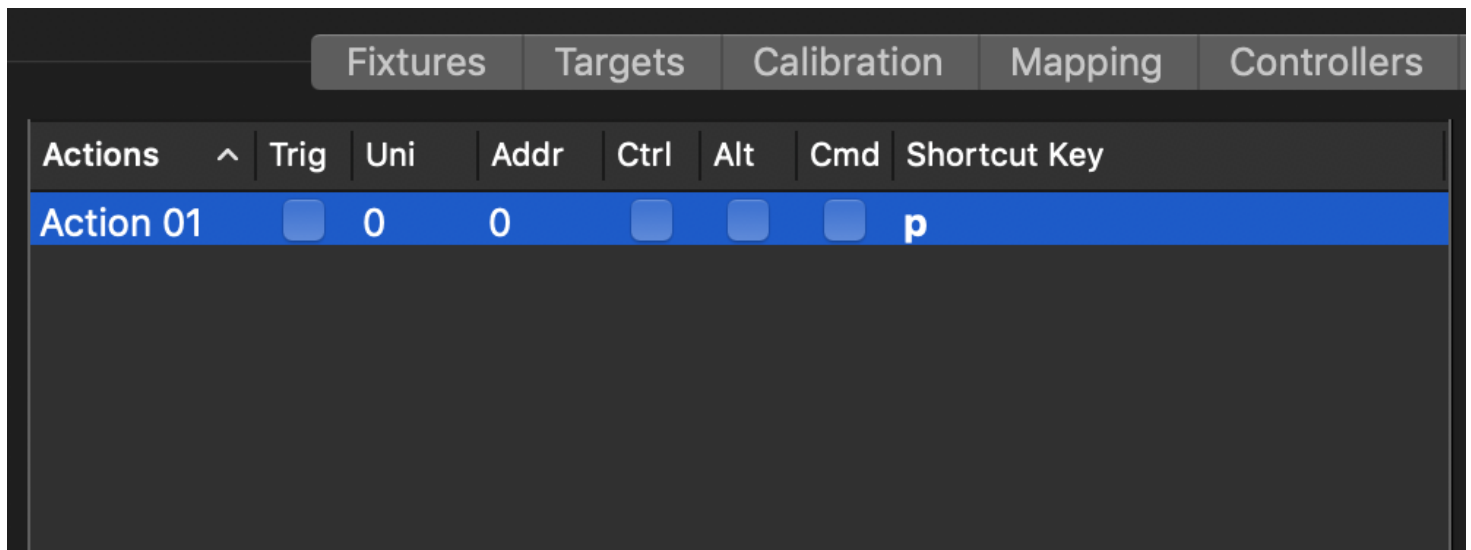
In this section, we discuss how to add assignments & presets in Follow-Me.

Adding assignments

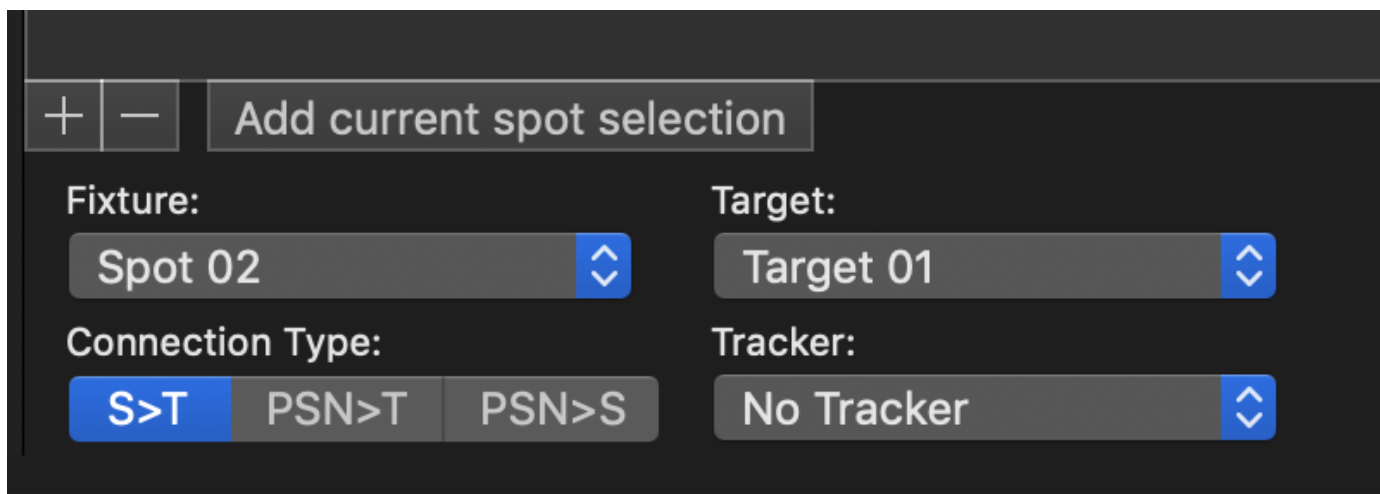
Assignments are used to connect fixtures to targets if you want to change which fixtures are following which target as part of your show. An example of a situation where you would use this:

Your show has 4 fixtures available on a straight truss for 2 targets. The fixtures are labeled as fixture 1 - 4. For the first song we want fixture 1 + 4 to follow target 1 and fixture 2 + 3 to follow target 2. For the next song however we would like this to be the opposite so we make an action to be able to quickly recall the assignment of fixtures.

1. Open the **Assignments** tab in Follow-Me.
2. Press the **+** button to create a new assignment, and rename the assignment as desired.
3. Add a Shortcut key to the assignment by double clicking it and filling in a key on your keyboard.



4. On the right side use **+** to add a fixture to the assignment. Pick a fixture in the **Fixture** dropdown menu. You can also use the option **Add current spot selection** if you have the fixtures already selected.
5. Use the dropdown menu **Target** to assign the fixture to the required target. If no target is selected the fixture will be switched to unused. You can also use the **PSN** dropdown menu to assign a PSN tracker.



6. Choose the connection type:

S > T = Spot to Target

PSN > T = Posi Stage Net to Target

PSN > S = Posi Stage Net to Spot

7. Repeat step 4 - 6 for each fixture you want to include in this assignment, and repeat step 2 - 7 for new each assignment you want to add.

NOTE: All assignments created can also be mapped to console buttons. For this, see [Console Mapping](#).

NOTE: If the fixture control channels are enabled then Follow-Me will ignore the assignments, thus the assignments will not work.

Adding presets

Follow-Me has three types of presets:

1. Target position preset
2. Target name preset
3. Set color parameters preset for fixtures on selected Target

Target position preset

Target position presets are predefined combinations of targets and positions; you can make any combination you want. Sometimes you want to have all fixtures on their predefined locations, sometimes only one target on a predefined location. To add a position preset, follow these instructions.

1. Aim the targets for a preset to their desired location in the Video window.
2. Open the Presets tab and press **+** in the bottom left to create a new preset.
3. Select the targets for which you want a preset to be stored, and press **Record down** below in the **Presets** tab. You can now see the target coordinates linked to this preset on the right side.
4. You can give a preset a **keyEquivalent**, so when you press this key on your keyboard, the preset will be enabled.
5. Finally, you can adjust the **FadeTime** of the preset, which is set to 2 seconds by default. If desired, you can set a note for the preset or target preset.

NOTE: You're also able to play the preset by selecting a preset and pressing the **Play** button down below the preset tab.

NOTE: All presets created can also be mapped to console buttons. For this, see [Console Mapping](#).

Target name preset

You can create a preset that when triggered changes the name(s) of your Target(s). This can be useful when for example the operator needs to follow the singer in the first song, and the bass player in the second. To add a target name preset, follow these instructions.

1. Open the **Presets** tab and add a new preset by pressing the **+** button in the bottom left.
2. Under "Target name changes in selected preset" press the **+** button.
3. Under "For target", indicate the Target of which you want the name to be changed. Also enter a new target name to the name the target should have once the preset is triggered.
4. Press the **Set** checkbox to have it added to the preset.

Repeat step 2 to 4 for the amount of target name changes you want to have in this preset.

Set color parameters preset for fixtures on selected Target

You can set a preset that makes all fixtures on the selected Target turn to a specified color. This can be useful when using Follow-Me without a lighting console attached. The feature works for all color parameters in a fixture.

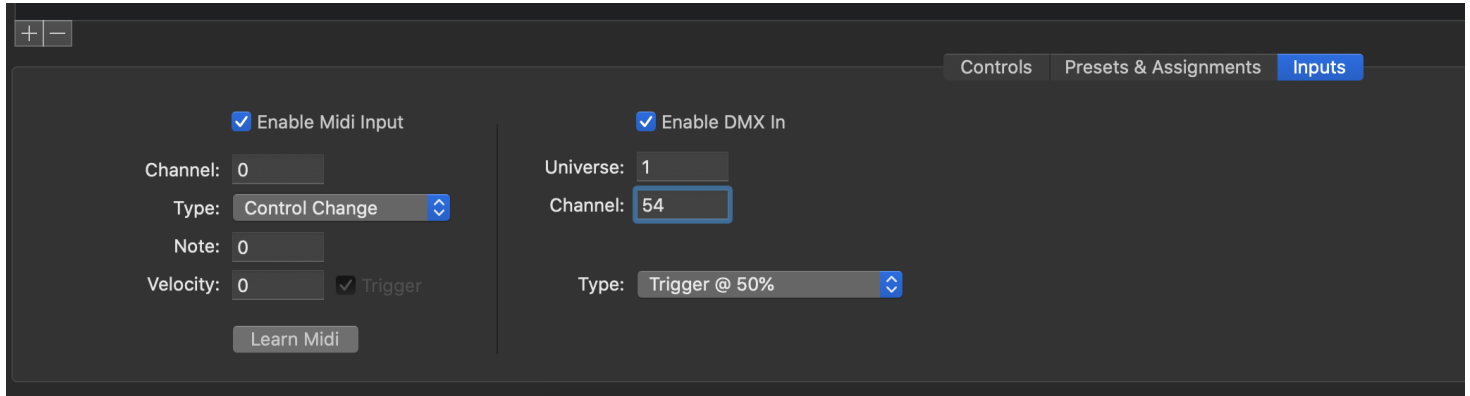
1. Create a new preset in the **Presets** tab.
2. Indicate with the checkbox which color parameters you want to include in the preset (for example: Red, Green and Blue).
3. Fill in a DMX value for the checked color parameters.
4. Indicate a Target to include in the preset.

Now you can use this preset to have the color of your fixtures attached to that target changed. It will be useful to map this preset to a button on a Follow-Me Mouse or Fader console. To do so, see the [Console Mapping](#) section of the manual.

Triggering assignments & presets from the lighting console

Each assignment and preset can have a DMX trigger linked to it. This way you can trigger this assignment remotely rather than with the keyboard. This can be done by going to the **Mapping** tab, creating a new mapping, assigning the assignment or preset and providing the right DMX address in the **Input** sub-tab.

When the trigger channel reaches a value of >50% the assignment gets executed.



You also have the option to trigger presets with index channel from DMX. With this, you create presets like normal, but instead of creating one mapping per preset we can make a mapping for multiple presets.

Example: You have 20 presets. Instead of creating 20 mappings with 1 preset per mapping and thus 1 channel per mapping. We make 1 preset and add all 20 presets in the mapping by selecting multiple presets.

In the **Inputs** sub-tab enable DMX in, set the universe and channel. Use the dropdown menu to select **Trigger Presets with index Channel**. This now gives you an index channel and an execute channel:

- Channel = Index
- Channel +1 = Execute

The index channel works as follows:

- DMX 0 = Idle
- DMX 1 = Preset 01
- DMX 2 = Preset 02
- DMX 3 = Preset 03
- =
- DMX 255 = Preset 255

The execute channel works as follows: Every time you bring this channel above 50% it triggers the chosen preset from the index channel. This gives you the freedom to trigger 255 presets with just 2 channels.

Please note that presets are added to the mapping alphabetically! So keep the presets in the correct sorted order to trigger the correct preset with the indexing channel.

Operating Follow-Me

Operating Follow-Me

In this section we will quickly go through some of the best practices for operating Follow-Me manually with the Follow-Me mouse and fader consoles. The consoles have been built to be as flexible for the operator as possible. This means that each console can be mapped the way the operator would like it. Preferably this is done beforehand by the system engineer. All the information about mapping consoles can be found [here](#).

Best practices for operators

1. Have the consoles mapped to your wishes. This includes, for example, having mapped camera intensity, beam height offset, and mouse sensitivity.
2. Sit comfortably with the controller either to the left or right of the body depending if you are left or right handed.
3. It is important that you understand how the sensitivity function works. With mouse sensitivity, you can increase or decrease the sensitivity of your mouse console. This way you can dynamically adjust the speed of the cross-hair depending on your needs.

Advanced settings

Measuring locations with the Laser Measure Integration

Measuring locations with the Laser Measure integration

For easy measurement of calPoints, fixtures, and TraXYZ anchors, we have integrated the Leica S910 in the software. This allows you to gather Leica measurements into the software, and then assign those to your specified calPoints, fixtures, and/or TraXYZ anchors. To get started, follow these steps:

Performing measurements within Follow-Me

1. Open the **Laser measure integration** window to start the process. You can do so by pressing its button on the **Fixtures**, **Calibration** or **TraXYZ** tab.
2. Place your Leica S910 on the stand, follow the [Leica documentation](#) for its setup. Turn on the Leica.
3. Press the **Func** button on your Leica, and press the P2P icon in the bottom right.
4. Connect the Mac to the Wi-Fi network of the Leica.
5. Press **Connect** to connect Follow-Me to your Leica laser measurer. Wait until the two are successfully connected, you'll see *Connected to S910* in Follow-Me.

Follow-Me is now connected with the Leica S910. Then perform the following steps:

1. Create a group by pressing **New group**, and name it for example *Fixtures* or *calPoints*.
2. Press **Laser on** to turn on the laser.
3. Before performing any measurements, you should first shoot the origin and alignment, which are your datum point (x/y/z 0,0,0) and a point on the **positive x-axis**. Aim the laser measurer on the datum point and press **Measure**. Do the same for the furthest point on the **positive x-axis**, and make sure that y=0 for this alignment point! This could otherwise mess up the coordinate system the Leica generates.
4. Measure the rest locations you want to measure.

WARNING: Make sure that the measurements of the datum point and the x-alignment point are on one straight line with regards to your stage, to ensure that the coordinate system the Leica will use is in order. Otherwise, the coordinate system will not be correct with regards to your stage.

When you're done measuring, go back to Follow-Me.

1. Click on the button **Assign measurements**. A new window called *Measurement transfer* pops up. On the left you can select the group you've made, and on the right you see the list of calPoints, fixtures & anchors.
2. Select a measurement from your group, select a list item on the right that you want to transfer your measurement to, and press the >>> button. The measurement will be transferred to the list item selected.
3. Keep doing this for all list items until you're done transferring your measurements.

You can create more measurement groups to measure even more locations.

Convert measurements from reference points

To measure specific locations in your performance area while you are unable to measure the origin and alignment point, Follow-Me is able to work with two defined reference points. By first measuring those two reference points of which Follow-Me already knows its exact 3D location, Follow-Me is able to calculate the exact 3D location of other measurements performed afterwards. Perform the following steps to do so:

1. Create a **New Group** in the **Laser Measure Integration** window.
2. Connect the Leica S910 device.

3. Measure reference point 1, which has to be a calibration point in Follow-Me of which you already know its exact XYZ location.
4. Measure reference point 2, which again has to be a calibration point in Follow-Me of which you already know its exact XYZ location.
5. Measure any other point, fixture or anchor.
6. Once all measurements are performed, press the **Convert group from reference...** button.
7. Select the two calibration points you used as reference points in the correct order and press the **Convert group** button. This will create a new group with the converted measurements.
8. Now that the measurements are converted, you can assign your measurements to your designated calibration points, fixtures or anchors using **Assign measurements...**

Using the Follow-Me Assistant iOS app

You are now also able to use our laser measure integration with the iOS app. This was made specifically for situations where your Mac is too far away from the Leica S910 device, or when Wi-Fi is unstable. The Follow-Me iOS app can be found [here](#).

With the app, you can either receive measure group data from Follow-Me by connecting the app to your Mac, or create a new group of points you want to measure. You'll then need to connect your Leica S910 device to the phone, after which you can shoot the origin, alignment, and any point you want to know the location of. Once done, connect the phone to the same Wi-Fi as the Mac, and sync back the measurements to Follow-Me. You can just receive the measurements in Follow-Me, or receive and instantly assign the measurements in Follow-Me. You can also assign the measurements at a later stage, by going to **Assign measurements** and pressing **Assign selected measurements based on ID**. This will automatically assign all measurements to the correct object.



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FOLLOW-ME

iOS

APPLICATION

LASER MEASURE
INTEGRATION TOOL

Advanced fixture settings

Advanced fixture settings

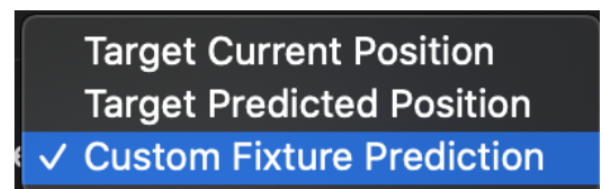
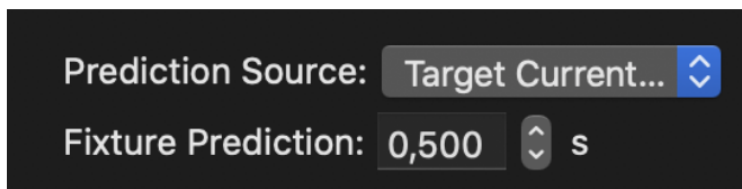
There are a lot of fixture settings that you can manipulate in Follow-Me. In this section, these are all discussed.

Fixture prediction

Sometimes moving lights can feel slow to the touch when being used in Follow-Me. This results in the beams staying behind when the crosshair is being moved. To fix this issue you can use the Fixture Prediction feature. This feature, as the name suggests, speeds up the movement of the fixture to allow the beam to stay with the target. We achieve this by adding a multiplying factor to the mouse movement.

We can set this in the fixture settings tab. To set the prediction per fixture you need to take the following steps:

1. Go to the **Fixtures** Tab
2. Open the **Fixture settings** sub-tab
3. Select the fixture(s) you want to set the prediction for
4. In the bottom you can choose the Prediction Source you want the fixture to listen to.
5. When set to Custom Fixture Prediction you need to set the Fixture prediction in the value field beneath.



Next to this set value we can also dynamically assign the prediction to the fixtures from the Control Channel. Channel 5 of the Control Channel fixture used to be the Fixture Acceleration channel. We have changed this to the Fixture Prediction Channel. From 0 to 100% you can set the prediction from 0ms to 1000ms. This is extra on top of the Fixture Prediction set for the fixture.

The following prediction sources are available:

Target Current Position: This source tells the fixture the current position of the target and the fixture will follow this position. This means that the fixture is not listening to any prediction.

Target Predicted Position: We can set a Prediction value per target. If we set the Prediction Source to Target Predicted Position the fixture will listen to the predicted position of the target.

Custom Fixture Prediction: When set to this source the fixture will listen to its own set Fixture prediction. This prediction value can be set in the Value field underneath the Prediction source dropdown menu.

In all cases the Prediction channel for the Control Channel for the fixture is highest takes precedence.

NOTE: If you would like to set prediction on a target basis, check out the [Target prediction](#) page.

To have fixture prediction shown in the 3D window, make sure to check the **Display target prediction** checkbox in the **Targets** --> **Other** sub-tab. Selected fixtures will be highlighted with blue beams.

Intensity from Desk

Intensity from desk (I.f.D) is a feature that can be found in the Fixtures tab, under the Beam Settings sub-tab. It is used when the LD/operator wants to be in charge of the maximum intensity level of the followspot. When this feature is being used the follow-spot operator can still fade out but when he fades in again to 100% on his fader, the output of the lights is only going to the level set from the console. The Follow-Me intensity control becomes an inhibit fader.

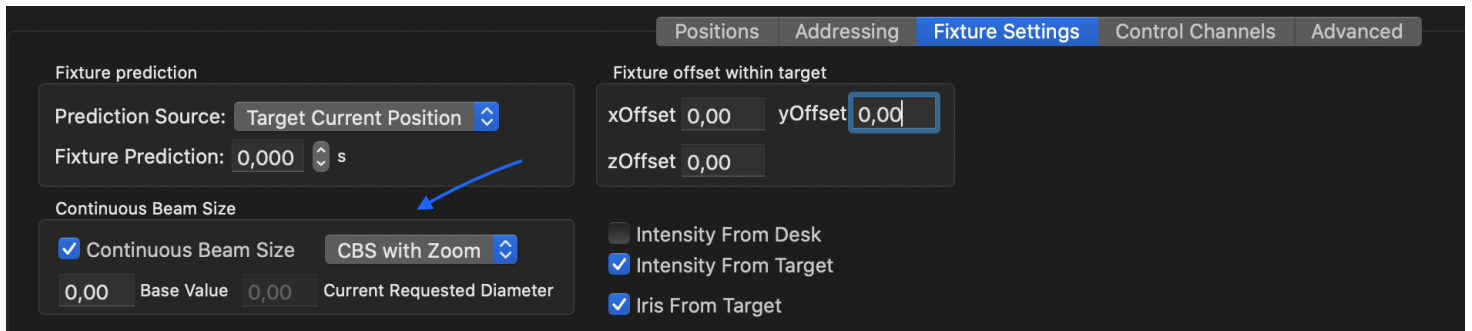
This feature can be set either from the **Fixture Settings** sub-tab or by clicking the checkbox behind the spot in the **Fixtures** main tab.

WARNING: If the Follow-Me operator forgets to fade back in, the LD/operator can't get control of the intensity either!

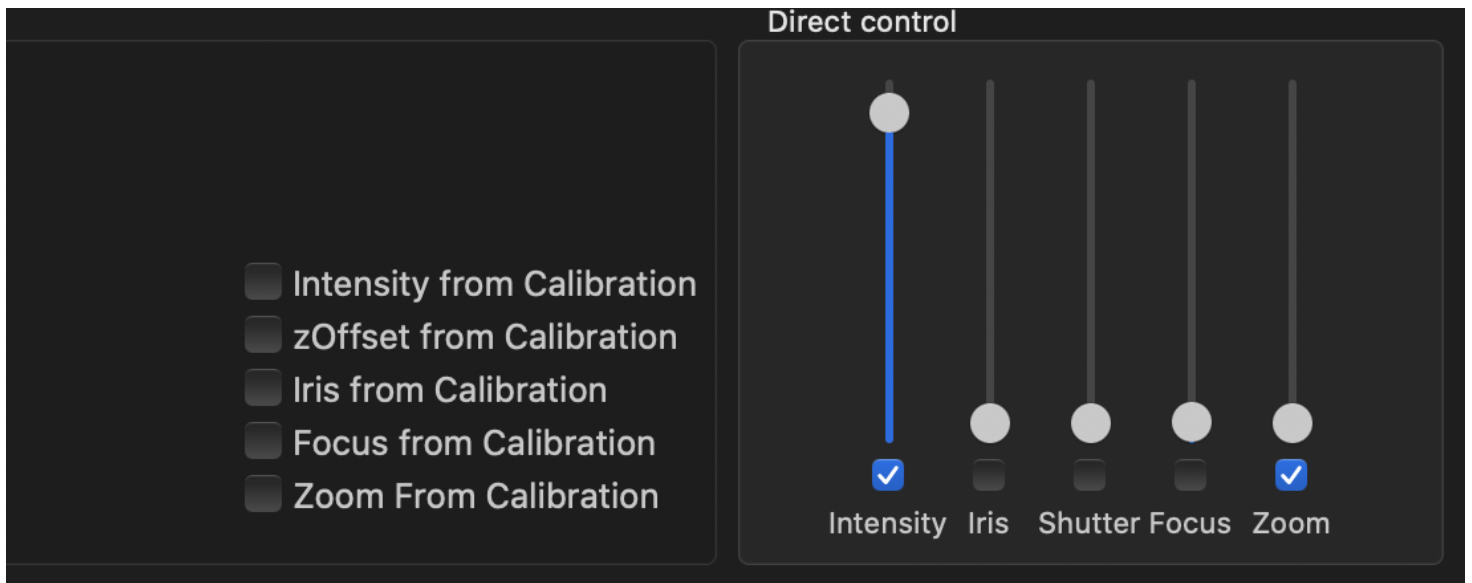
Continuous beam size

Follow-Me offers the option for continuous beamsize. When using this option the fixtures will use the zoom to update the size of the beam when the target is being followed across the stage.

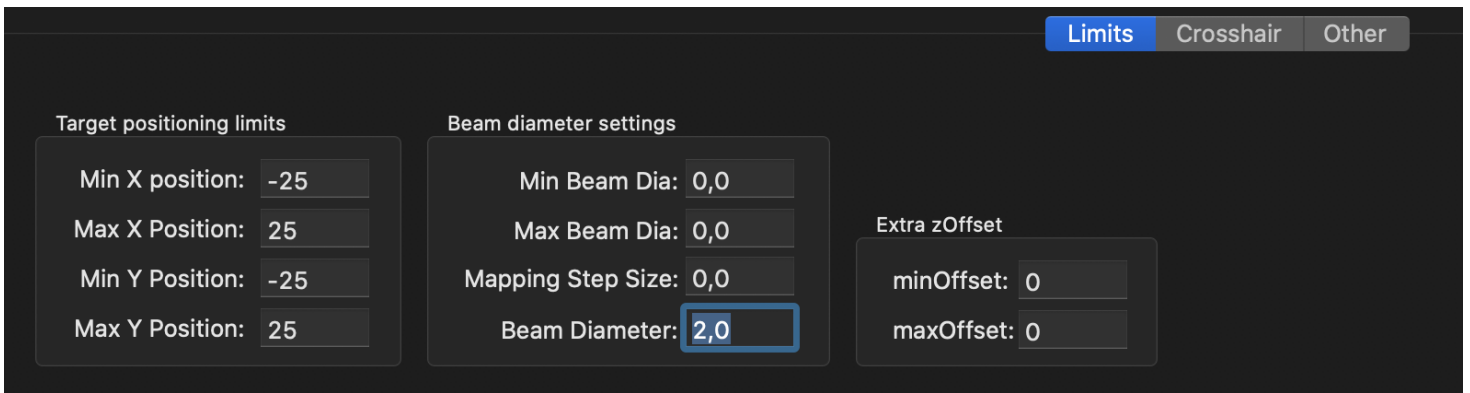
1. Open the **Fixtures** tab in Follow-Me, and select the **Fixture Settings** sub-tab.
2. Click on a fixture, and select the checkbox for **Continuous Beam Size**.



3. Make sure the **Zoom** checkbox is enabled under **Direct control** in the bottom right.



4. Now, navigate to the **Target** tab and set the diameter for the beam of that target. This then gets copied to the fixtures that are assigned to this target.



You have now successfully turned on continuous beam size for the selected fixtures on the selected target.

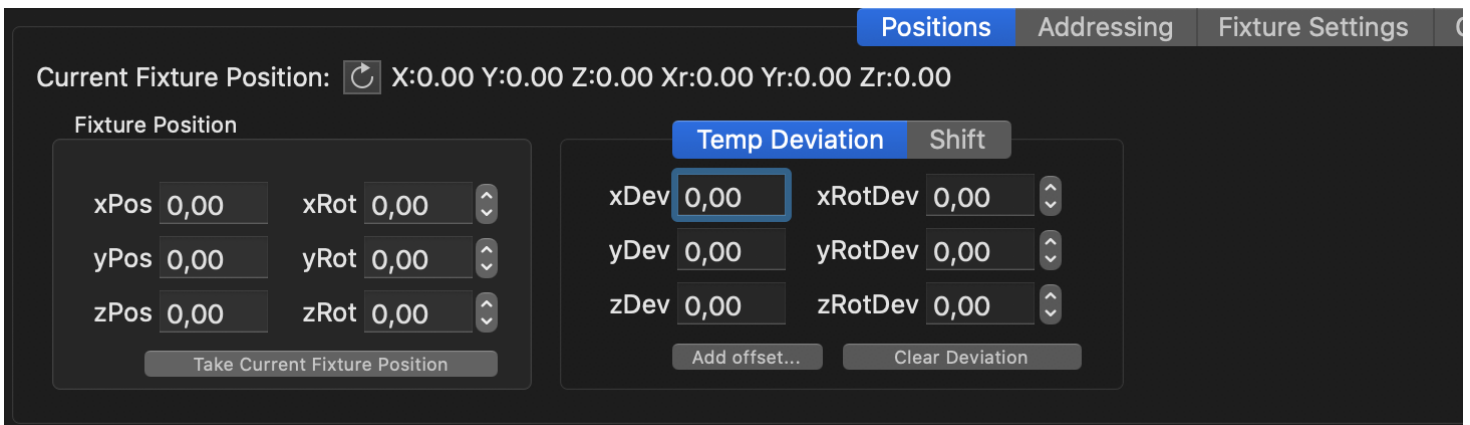
NOTE: The beamsize defined for the target gets automatically copied to each fixture that gets assigned to that target. This way you can have different beam sizes for each target and this gets updated each time a fixture gets assigned to the target.

Temporary deviation

Temporary deviation is a helpful tool when you are on tour and the fixtures are not always on the same spot everyday.

EXAMPLE: Your show has 4 lights in the front truss with their X,Y,Z coordinates filled into Follow-Me for their position. Today's venue forces you to have the front truss a meter further downstage than normal. Rather than changing all the fixture data we can simply select all the front truss fixtures and add a Temporary deviation of -1 on the Y-axis. The next time you are back to the usual position you can clear the deviation and your fixture position data is back to normal. This makes it even simpler when your truss is angled on the Z axis and each fixture has a different Y value. When you select all the fixtures and add the deviation, Follow-Me will add the deviation to each individual Y value regardless if they are the same or not so the angle of the truss stays the same but the entire truss has "moved".

1. Measure the fixtures that are on a different position than normally.
2. Go to the **Fixtures** tab in Follow-Me, and select the fixture or fixture group that deviates from its original value.
3. Provide the difference in position in the **Temp Deviation** field for the fixture or fixture group, by filling in values in **xDev**, **yDev** and/or **zDev**.



NOTE: Temporary deviation is now mainly used for fixture refinement values.

Fade @ Flip

When the fixtures you're using sometimes flip while they're being used as a followspot, you can use the Fade @ flip feature so that this doesn't stand out in your show.

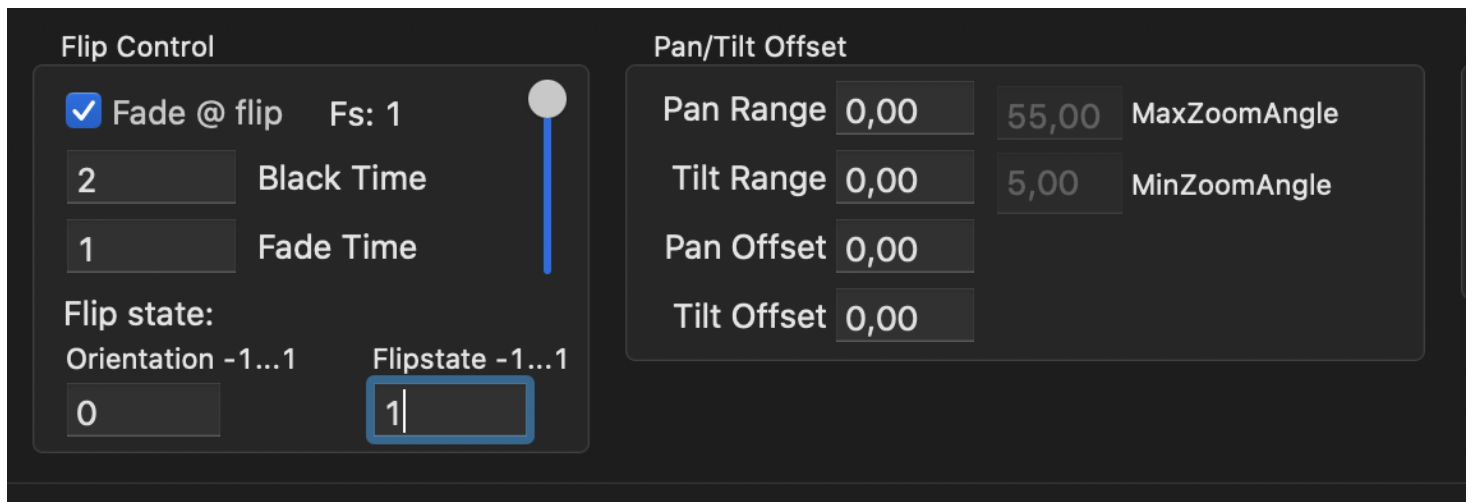
To turn on this feature, select one or more fixtures in the **Fixtures** tab that you want to set up Fade @ flip for. Go to the **Advanced** sub-tab in the bottom of the screen. In the bottom right, you will see a box indicating Flip Control. The controls mean the following:

- Black time is the time that the fixture has to do a flip, during this time the intensity of the fixture stays 0%.
- Fade time is the time at which the fixture comes back to the intensity level that was active before the flip. This is the length of the fixture fading back in.

A typical setting would be to have a 2-second black time and a 1-second fade time. This can be changed specifically to the needs of your show.

Also, we can find information on the flip state of the fixture here, and controls of what the fixtures should do when a flip happens. Ideally, you'll want to hang the fixtures outside of the working area, but if this is impossible you can use flip control to specify how long black time and fade time should be. With the base settings, the fixture will turn black for 2 seconds, and then fades back in a duration of 1 second.

NOTE: At the top of the main Follow-Me window, there's a shortcut for **local control**. This button can be customised to instantly enable parameters such as enable intensity, iris, zoom, and so on. You can customise this in the **Setup** tab. You can then clear all these parameters once done using local control by using the **Clear** shortcut, to get ready for a show. This can also be customised in the **Setup** tab.



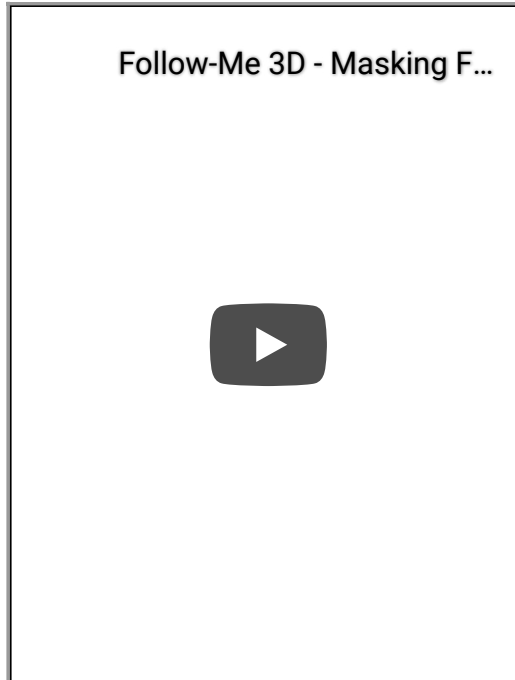
Direct control

In **Direct Control** in the bottom right of the **Fixtures** tab you are able to take control of fixtures yourself, instead of the lighting console. Use the checkboxes above the specific parameters such as intensity and shutter to take control of these parameters through Follow-Me. Make sure to ignore control channels to be able to use all parameters.

Object masking

Object masking

In this section we go into detail on object masking. Watch below video to learn more about object masking.

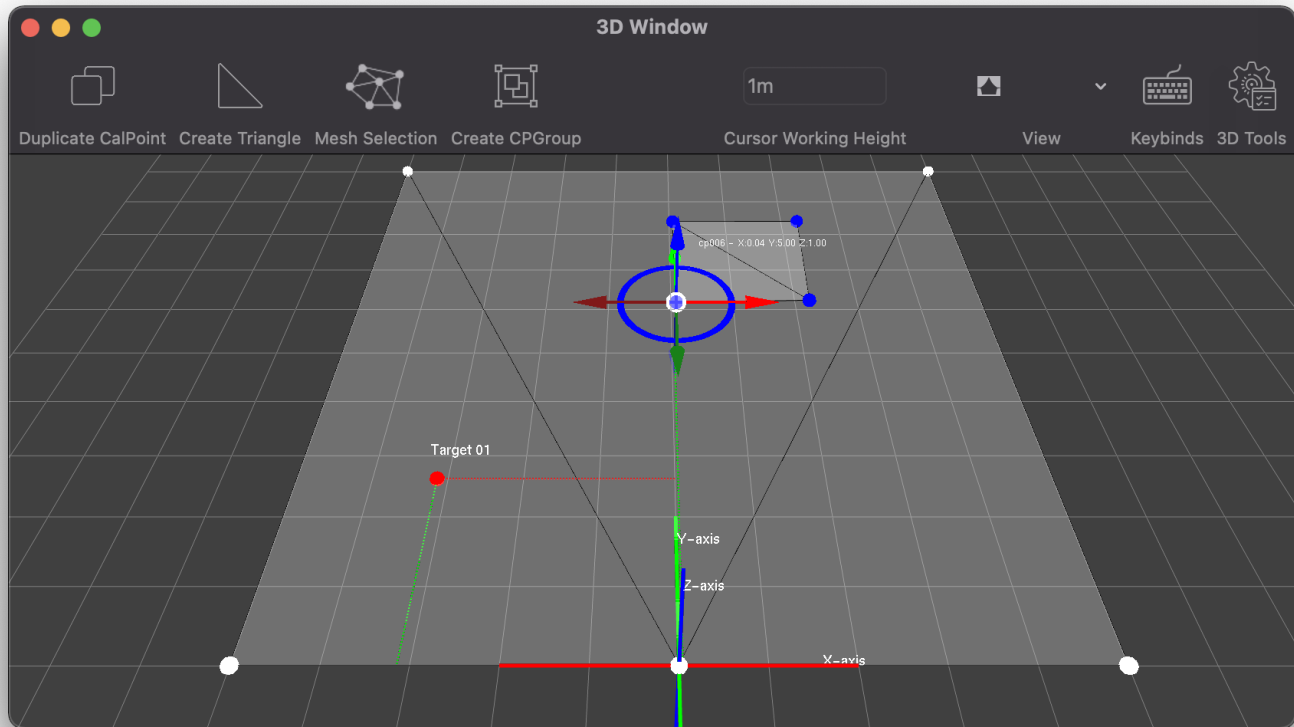


Set up object masking

To set up masking, you require to work with a calibration point group. Read more on that on the [Calibration point groups](#) page. To set up object masking, take the following steps. If you already have a calibration point group to work with, skip to step 4:

1. Using calibration points, recreate the object using its exact $x/y/z$ coordinates. Use the 3D window to easily add and remove points.
2. Mesh the points together using the **Create Triangle** and/or **Mesh Selection** buttons.
3. Select all the calibration points within the object, and press the **Create CPGroup** button. This will make those points into a single calibration point group.

From now, you are easily able to modify the position and orientation of this group using the positioning tool in the 3D Window.



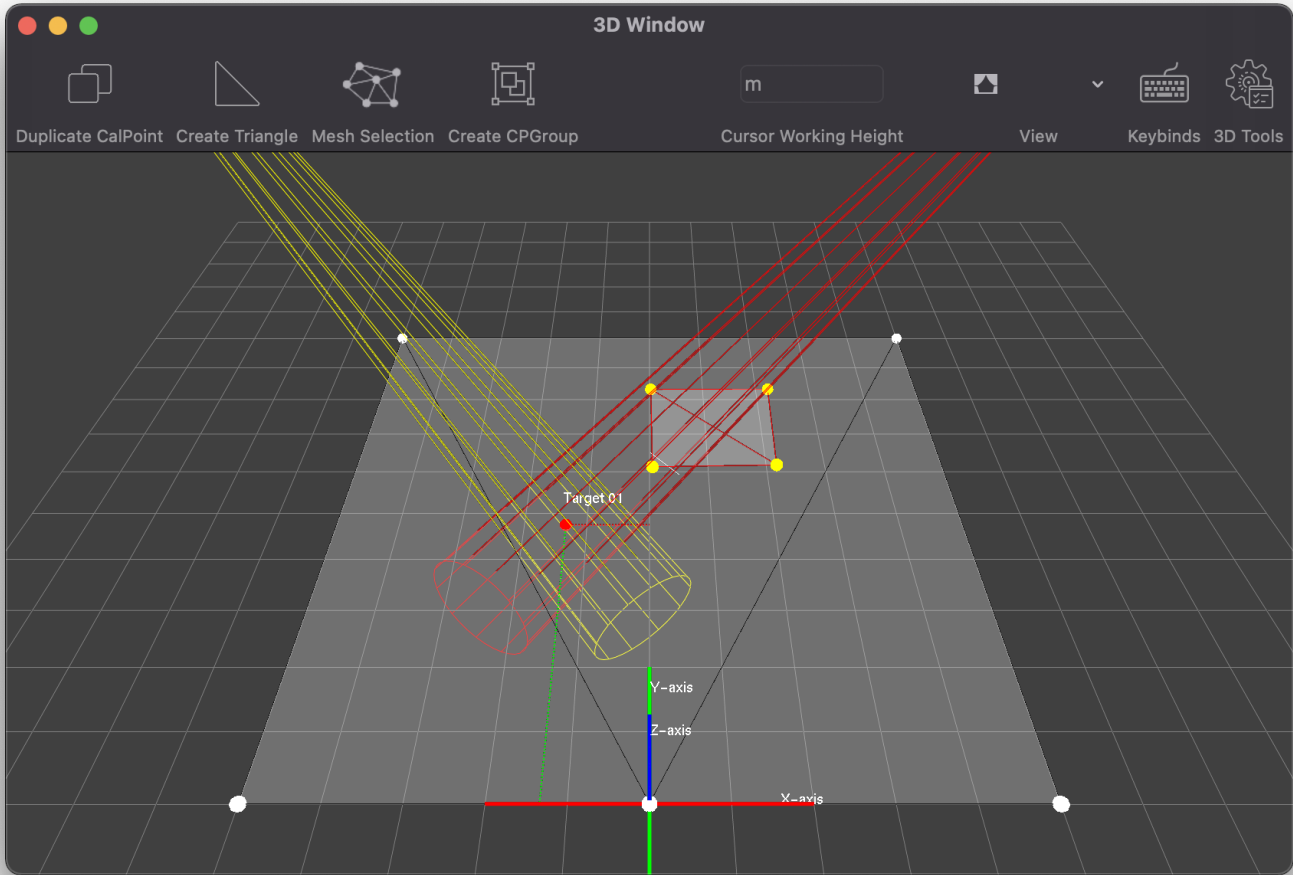
4. To mask the object from any fixture beams, go to the **Calibration** tab and open the sub-tab **Groups**.
5. For the created group (named *CalPoint Group ###* by default) press **Enable** under Masking.

Now that you've enabled masking of the group, you will have to indicate for each fixture individually whether they should listen to object masking.

6. Select one or multiple fixtures of which you want them to not hit the object.
7. Under **Fixtures** and the **Advanced** sub-tab, press the **Enable masking** checkbox. You are able to specify a fade-out time and a fade-in time, as well as the cone extension length (the length of the cone after the beam hits the target).
8. Enable **Continuous Beam Size** under **Fixture Settings** and set a base value of for example 2,00 meters.

From now on, when a beam would hit the specified object, the fixture intensity is turned down with your specified fade-out time. You will see a visual reference of the masking in action in the 3D Window.

Important: If you wish to mask an object such as a truss, you will want to prevent the target snapping onto this object. Under **Calibration** and **Groups**, you are able to **Disable Mesh from Selected Group**, to make sure the target will not jump on it. You can always re-enable the mesh by using the **Enable Mesh from Selected Group** button.



Multi camera setup

Multi camera setup

The Follow-Me system is based on the use of a central mounted camera to give you the visual view of the area you are following your targets in. Sometimes a single camera just isn't enough to cover the area you are using. In this situation you can setup a multi camera system, with as many cameras that are needed. For each camera that is added we require an extra Follow-Me 3D system. In this section of the manual we will take you through the steps to make this happen.

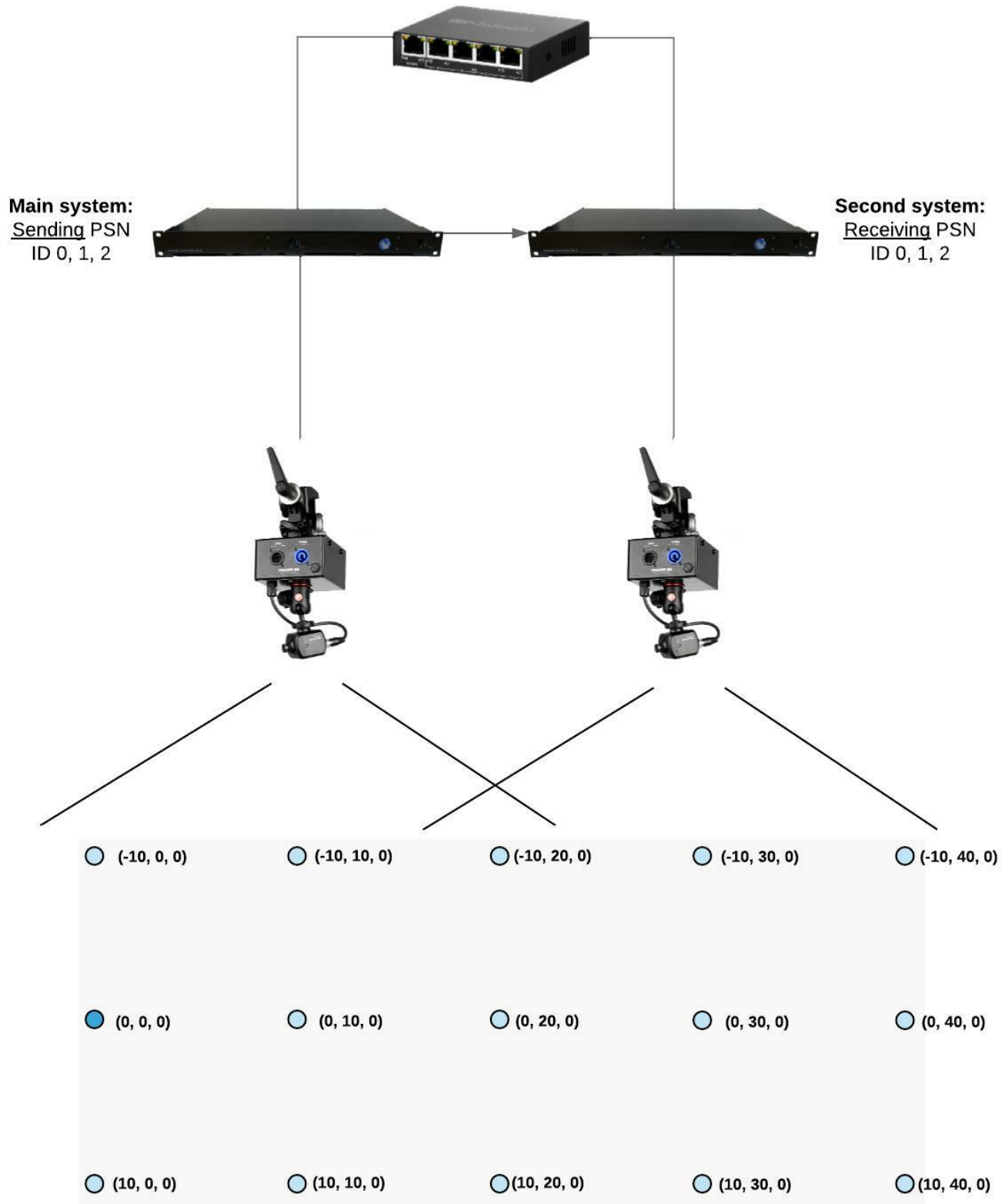
For this example we will look at a set-up where two cameras are required to cover the performance area. For this, the following is required:

- 2 licensed Follow-Me 3D systems
- 2 Follow-Me Camera sets with Marshall CV503 or CV506
- Network switch

To set up the system, we start with measuring the entire floor space. In this example we use the main camera for the Main-Stage and the second system for the thrust and B-Stage.

As you can see in the images above we have a certain overlap on both cameras. Both cameras see the downstage edge of the main stage. This overlap is needed so we do not lose sight of our crosshair when we enter the view area of our second system.

We are using system 1 as our main system and system 2 is purely for visualisation of the targets across the extra camera. This means that all the fixtures, mappings and consoles are added and calibrated in system 1. System 2 is only receiving the PSN information for the targets.



Adding targets

You'll need to add the amount of targets you want to follow on both systems. On system 1 we choose to broadcast our targets on PSN by clicking the PSN tickbox behind each target in settings/targets. The default PSN ID's are 0 for target

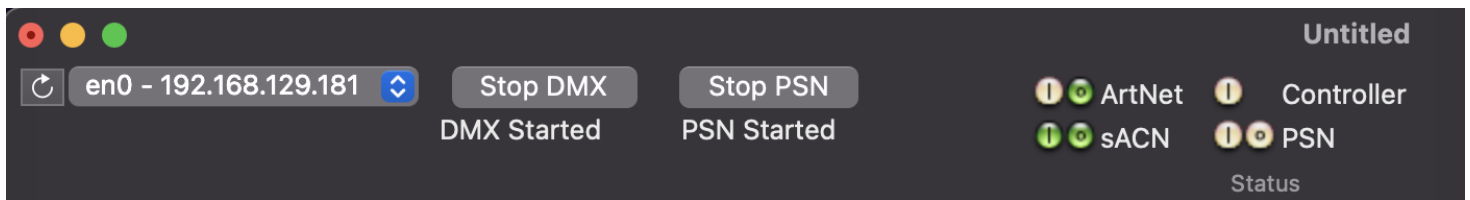
1, 1 for target 2 etc. You can change this but for our example we'll leave them default.

System 1 is now setup. On system 2 we need to do a few more steps. We have added 3 targets on the **Targets** tab and made sure the PSN is **NOT** active on these target. Now, follow these steps:

1. Open the **PSN** tab.
2. Select the **Local Trackers** sub-tab
3. Use the **+** to add 3 local trackers
4. On the **Targets** tab select target 1, go back to the **PSN** tab, select local tracker 1 and click **Add Targets** on the Targets window. The selected target will now show in this window. Repeat this step for each target.

Activating PSN and linking the systems

First, we need to make sure that all systems have the PSN activated. On the main window top left make sure to start PSN by pressing the **Start PSN** button. The light in the top indicating PSN connection (input or output, depending on the system sending or receiving) should be green.



The next step is to link the PSN from system one to the targets on system 2.

1. Open the **PSN** tab on the second system.
2. Select the **Network** sub-tab. This will show you the available PSN servers in the network. We should see one Follow Me PSN server with the IP address from our system 1 and when we select this server we should see 3 Targets at the bottom left window in the Trackers on Server column.
3. Select Target 01 on the left hand side and select Tracker 01 on the right hand side.
4. Click the button **Assign Tracker** The "Tracker 1" text will now be replaced for "Target 01"
5. Repeat step 3 and 4 for all remaining targets.

All your targets have now been linked and you should be able to move your crosshair from screen 1 to screen 2. Depending on the position of the Follow-Me camera set for the second system, you might need to change the orientation settings under the **Calibration** tab, to make sure the target moves in an intuitive way for the operator.

NOTE: To make sure you have the link everytime you open Follow-Me go to the **PSN** tab and tick the option to Start PSN @ StartUp.

Intensity, zOffset, iris, focus & zoom from calibration

Intensity, z-Offset iris, focus & zoom from calibration

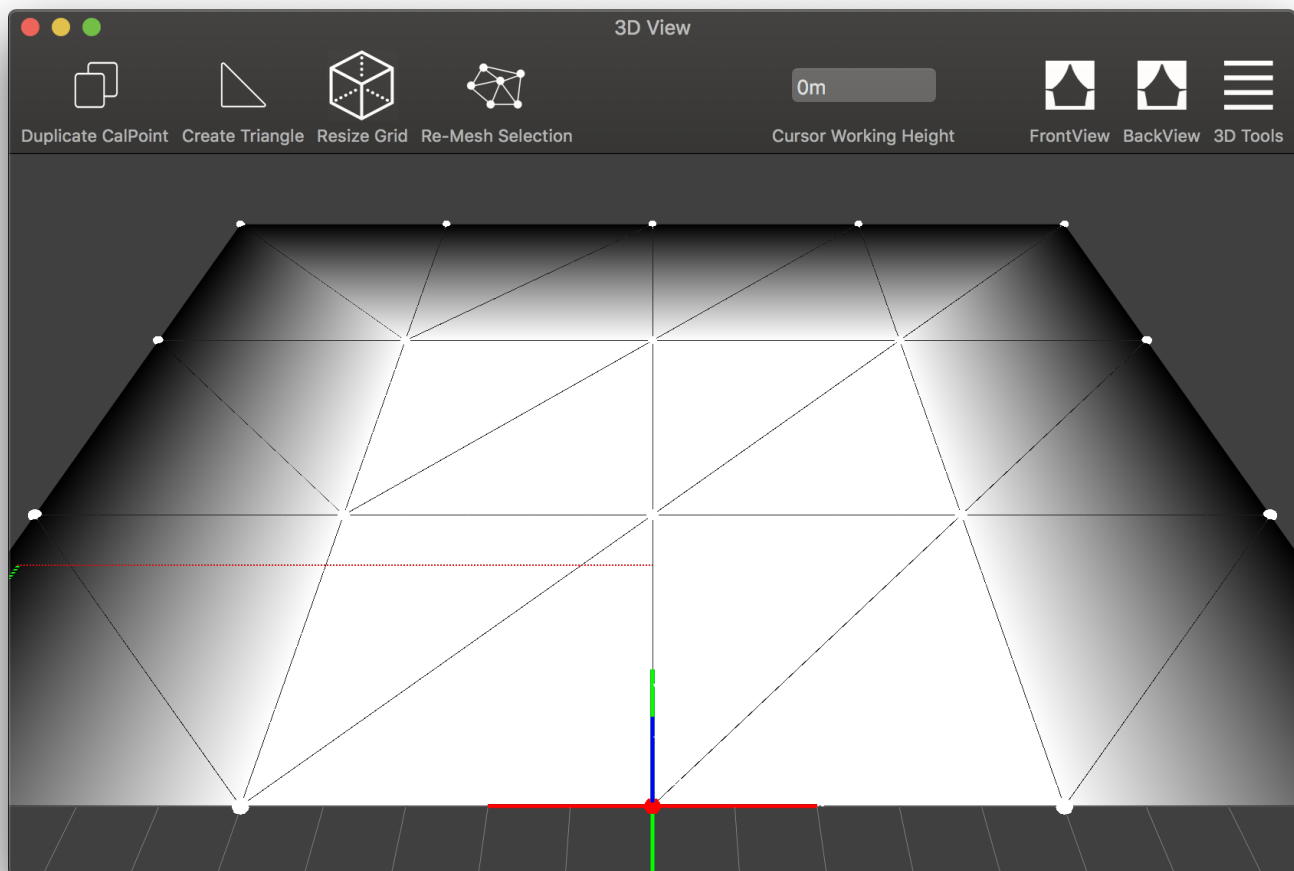
When your stage is deep, you might want the iris, focus and zoom to adjust automatically, in order to have a beam that stays the same width when the artist moves towards or away from the spots. To do so, you need to 'record' the iris, focus and zoom for each calibration mark. You might also want intensity or zOffset of the beams to change with regards to where the performer is on stage. This is all explained in this section.

Intensity from calibration

To set intensity from calibration, follow these steps:

1. First, select the fixture(s) you want to set intensity from calibration for.
2. Select one or more calibration points in the **Calibration** tab that you want to set intensity for, and press **Add selected fixtures** on the right side of the tab. Now when you press a single calibration point, you can see the attached fixtures and its values given to it, such as intensity, iris, focus and zoom.
3. Indicate per spot the intensity level you want for each calPoint. You can also set the intensity for multiple calpoints and multiple spots at the same time using the **Set intensity for selected calPoints** button below. Fill in a value between 0 and 1.

You can have the intensity visualized per spot in the 3D view. To do this, press the button below in the **Calibration** tab: **Display Intensity on 3D window mesh**. Select one of your spots, open the 3D window, and see the result.



Iris, focus, and zoom from calibration

1. Go to the **Targets** tab in Follow-Me, and select a target to use for the iris, focus and zoom from calibration. In the **Other** sub-tab, check **iris**, **zoom**, and/or **focus from calibration**.
2. Go to the **Calibration** tab, choose and select the first calibration coordinate: it will turn blue.
3. Guide the crosshair in the Video window on to the blue selected calibration dot.
4. Go to the **Fixtures** tab and select the fixtures to calibrate, open the sub-tab **Direct control** at the bottom of the screen and adjust the iris, focus and/or zoom for those fixtures. Also, go to the **Beam settings** sub-tab to enable **iris, focus and/or zoom from calibration** for the fixtures that should have this.
5. When done, go back to the **Calibration** tab and press **Record Target**: all selected fixtures will appear in the Fixture Calibrations window .
6. Repeat step 2 - 6 for all targets and all calibration marks.

Once you have done this, you will still need to indicate that you want the target and its assigned fixtures to listen to the set calibration values. To do so, perform the following steps:

1. Go to the **Fixtures** tab.
2. Select the fixtures you've set calibration values for and open the **Fixture settings** sub-tab.
3. On the right, check the checkboxes for which fixture values you want to be controlled from calibration. This includes: Intensity, zOffset, Iris, Focus and/or Zoom.
4. Go to the **Targets** tab and open the **Other** sub-tab.
5. Check the checkboxes for which target values you want to be controlled from calibration. This includes: Intensity, zOffset, Iris, Focus and/or Zoom.

Now you are good to go and the checked parameters will be controlled from calibration.

Heads-up: Once the instructions have been performed, you are able to use the buttons Playback Target and Playback Spot in the Calibration tab, if you want to see how the specific fixtures look with the settings you have recorded.

System integration

Merging

Merging

There are a few different options available that we will outline in this chapter and then we will look at each option in closer detail and how to set it up in their own chapters. There are 3 main methods how to integrate Follow-Me into your system, which are discussed below. First - Follow-Me is able to integrate in your lighting infrastructure over ArtNet and sACN.

For sACN, you can specify an output priority under Advanced settings in the **Connectivity** tab under the **DMX Network** sub-tab. Default priority is set to the standard which is 100. Follow-Me can Multicast or Unicast sACN. For the ArtNet input and output, Follow-Me is based on the official ArtNet protocol using Subnet 0 Universe 0 for the first universe. Follow-Me can Unicast or Broadcast ArtNet.

Merging in Follow-Me

The easiest way to integrate Follow-Me into your system is to output Art-Net or sACN from your lighting console straight to Follow-Me. The software will read the incoming data and merge this with the data from Follow-Me. For each channel that we want to control with Follow-Me, the incoming values are being ignored and the values from Follow-Me are being added. All the channels that we do not intend to control are passed through to the output universe.

To achieve this the Follow-Me software has an Input Universe and an Output Universe. The input is what the console is sending out, the Output is what Follow-Me is sending to the lighting rig. The nodes are then set up to output the Output Universe from Follow-Me and your system is up and running.

Example: The console is sending out the 4 fixtures of the example on universe 01, Art-Net 00. Because Follow-Me is an Art-Net based system we use the Art-Net universe numbering. Follow-Me is setup with Input Universe DMX: 1 art net: 00 and Output Universe DMX: 11 art net 10 We only want to control Pan, Tilt from Follow-Me so the software passes all the data for the channels of your fixture from universe 00 to universe 10 except for the Pan and Tilt channels. The data for these channels is being generated by Follow-Me and added to Universe 10. (Follow-Me merges the data for you). The nodes have been setup to output universe 10 to your fixtures and your system is now up and running. See the figure for a basic illustration of this setup:

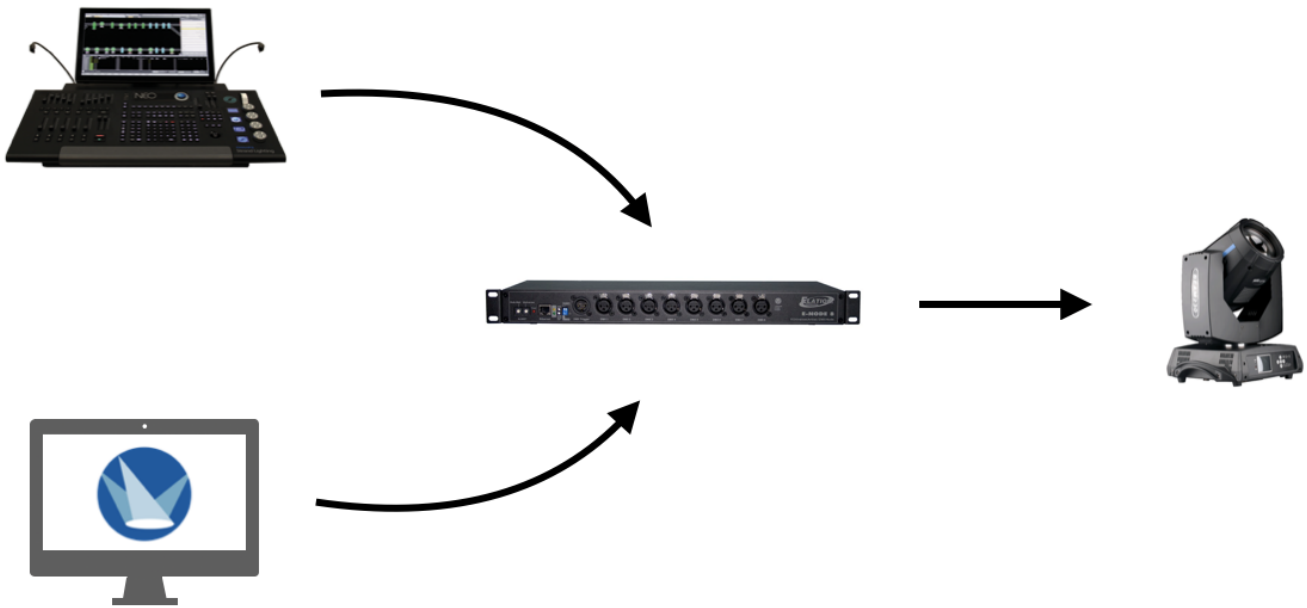


Merging in an Art-Net / sACN node

It is also possible to do the merge in an Art-net or sACN node. This can be set in two ways:

- Both the lighting console and Follow-Me output different universes on the network for the same fixtures. In the node you would need to make a softpatch. Here you can then specify which surface (Follow-Me or lighting console) should output the data for each parameter.
- Both the lighting console and Follow-Me output the same universe, and have Follow-Me output at a higher priority than the lighting console.

When Follow-Me control is active, it will take control over any enabled parameters such as pan, tilt, focus and zoom. When Follow-Me control is inactive, the lighting console will have full control over the fixture.



Merging in a lighting console

Merging in a lighting console is possible for Follow-Me to work. In this case Follow-Me will send the data of the fixtures on the network. The lighting console will receive this data and merge it in the lighting console. For this option proper knowledge of the lighting console and its merge options is recommended.

An important part of this merge option is that the merge in the lighting console can create a feedback loop where a merge in HTP is caused. This causes issues when certain parameters like pan/tilt are not able to be controlled with Follow-Me or the lighting console when a certain value is higher and thus takes precedence. To eliminate this you might need to output the fixtures you want to use for Follow-Me on a different universe than the rest of the fixtures.

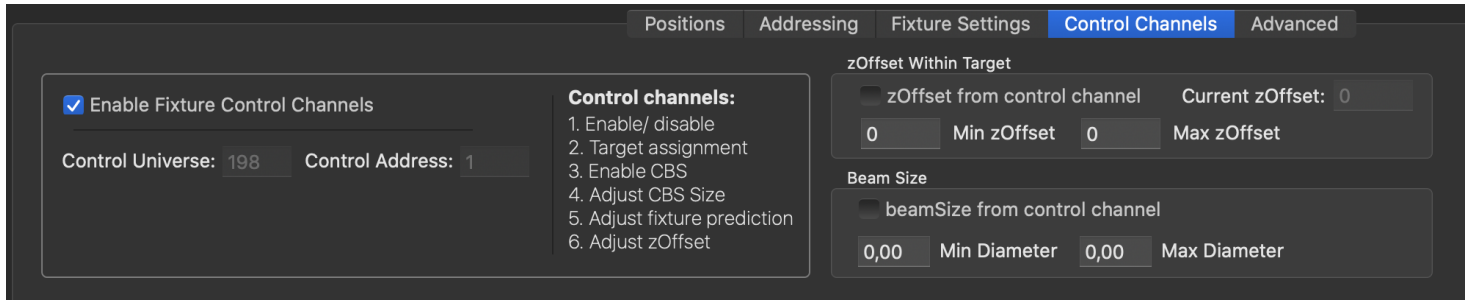


Control channels

Control channels

To be able to control Follow-Me from a lighting desk you need a fixture personality file. The Follow-Me fixture personality exists of 6 channels. With each channel you can either enable/disable or change certain functions in Follow-Me.

To use control channels for a fixture, you'll need to enable this in the fixture. Go to the **Fixtures** tab and press the **Control channels** sub-tab in the bottom of the screen. Press **Enable Fixture Control Channels**. Make sure to specify a **Control Universe** and **Control Address**.



For every fixture you want to use with Follow-Me you need to patch a Follow-Me Control Fixture in the lighting desk. This can be done as a separate fixture but also as a multi patch like you would do with a VL5 or generic dimmer and scroller.

Download the Follow-Me fixture personality for your lighting console below:

- [Avo](#)
- [HOG](#)
- [MA](#)
- [Vista](#)

Control channels overview

The control options are always in the following order:

1. Enable / Disable Follow-Me:

Enables or disables the fixture to be controlled by Follow-Me.

2. Target Assignment:

With this channel you are able to assign fixtures to targets created in Follow-Me.

3. Enable / Disable CBS:

Enables or disables the Continuous Beam-size.

4. Beam Size:

You can set a Min and Max Continuous Beam-size value in the Follow-Me software for each fixture. With this channel you can change the size of CBS by changing the value of the channel from 0% > 100%.

5. Fixture prediction

Controls the fixture prediction that is sent out to the fixtures, from 0 to 1 seconds.

6. z-Offset:

You can set a Min and Max zOffset value in the Follow-Me software for each fixture. With this channel you can change the z-Offset by changing the value of the channel from 0% > 100%.

Find the exact channel mapping parameters in [this document](#) (v0.6.215>).

PLEASE NOTE: The control channels per lighting console are always in the order as specified above. Channel names could differ per lighting console.

Enable / disable Follow-Me

Enables or disables the fixture to be controlled by Follow-Me. This channel gives you the possibility to give the control for the fixture to Follow-Me or the lighting desk.

From 0% > 100% is a crossfade from lighting desk to Follow-Me. You can program this channel like you would do with any attribute in the lighting desk.

This channel will give control to Follow-Me for all the attributes you have enabled in Follow-Me.

Target assignment

You can assign fixture to each target you want in the software. With the ControlChannel this can also be done from the lighting desk. Now the lighting designer can program which lights are going to which target.

The Follow-Me Fixture personality is made to be able to assign 100 targets.

Every target has its own DMX value. The correct DMX value for each target can be found at [here](#).

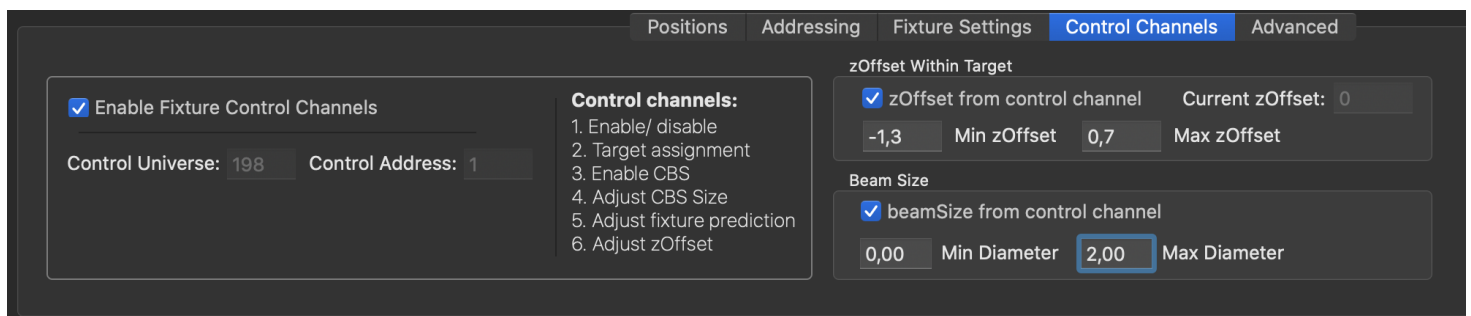
Enable/Disable CBS

Simply enable or disable the Continuous Beam-size from you lighting desk.

Beam Size

To be able to control the size of the Continuous beam from the lighting desk you need to set a minimum and maximum size in the Follow-Me software. The lighting desk can then change the size by changing the value of the channel 0% being the minimum value and 100% being the maximum value.

1. Go to **Fixtures --> Control Channels**
2. Tick the checkbox **BeamSize from CtrlChannel**
3. Set a **Min Diameter** and **Max Diameter**



Fixture prediction

This parameter works a little different than the rest: it doesn't have to be enabled in Follow-Me. 0% fixture prediction from the lighting console means 0 sec, 50% means 0,5 sec while 100% fixture prediction from the lighting console means 1 sec.

zOffset size

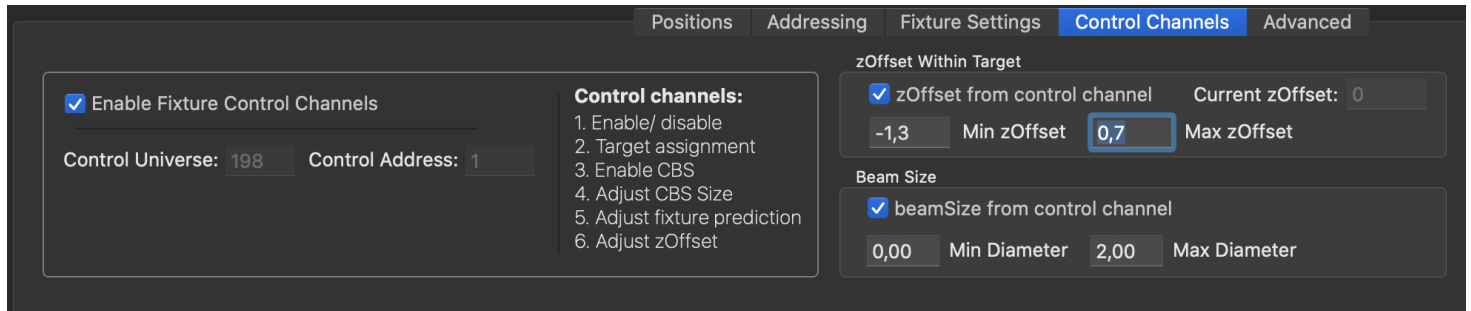
It is possible to adjust the zOffset from the lighting desk. Just like the CBS size we set a minimum and maximum value in the software. The lighting desk can then change the size by changing the value of the channel 0% being the minimum value and 100% being the maximum value.

Heads-up: When changing the zOffset with the control channel you will not see the crosshair move up and down like you would see when moving the zOffset fader on your fader console. The zOffset size from the

control channel is on fixture base. The zOffset fader on your fader console is on target level.

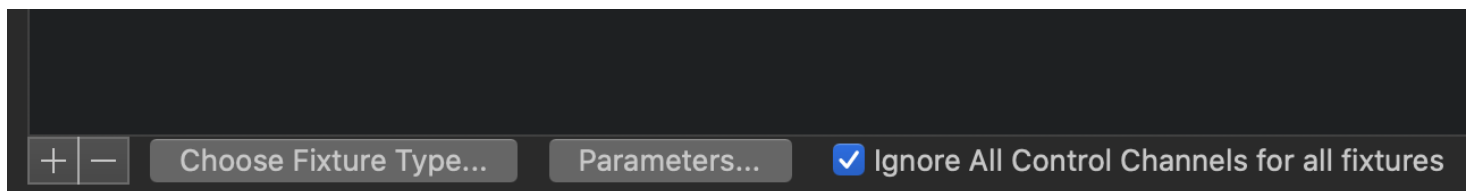
Take these steps to setup the preferred zOffset per fixture. It is also possible to do this for more fixtures at a time simply by selecting the fixtures you want to set the Min and Max values for:

1. Go to **Fixtures** --> **Control channels**.
2. Select the fixtures you want to set the Min and Max values for.
3. Tick the checkbox **zOffsetFromControlChannel**.
4. Set a **Min zOffset** and **Max zOffset**.



Ignore control channels

If you want to take local control of your fixtures with the Follow-Me system, you have the option to ignore control channels. To do so, go to the **Fixtures** tab and select the button: **Ignore All Control Channels for all fixtures**. This can be found below the fixtures table.



The ignore control channels feature can also be set and reset using the **Local Control** and **Clear** button in the top toolbar of Follow-Me. The functionality of the buttons can be set to your preferences in the **Setup** tab.

WARNING: Make sure to un-check this button before the show starts!

Posi Stage Net (PSN)

Posi Stage Net (PSN)

Posi Stage Net (PSN) is an open protocol for on-stage, live 3D position streaming. Follow-Me can use PSN in two different ways. It can either **send** PSN and act as a PSN server, or it can **receive** PSN which can be used for integration with automation systems and Follow-Me TraXYZ. We'll first go into detail on the default PSN settings in Follow-Me, and after that you can read more about sending or receiving PSN with Follow-Me.

Default PSN network settings

The default IP settings for sending and receiving PSN in Follow-Me are IP: 236.10.10.10 and portnumber 56565.

It is possible to change the preferred network interface you want Follow-Me to send and receive PSN on. By default it is the network interface that is set for sending Art-Net. If this is not preferred it is, possible to add a second network interface to the machine that is running Follow-Me. This interface has to be in the correct IP range as the rest of the PSN servers on the network. The IP of that interface needs to be added to the **preferred PSN interface IP** section in the **Setup** tab.

NOTE: By default Follow-Me will not start PSN automatically when launched. To change this simply go to the **PSN** tab and tick the option **Start PSN @ StartUp**. **NOTE:** It is also possible to change the name of the server. By default this is FollowMe, but it can be changed in the **Setup** tab.

Follow-Me sending PSN

Follow-Me can broadcast the positional information of the target via PSN. This data can be received by any device that can receive PSN. These include lighting desks, mediaservers or even sound processors.

To use Follow-Me as a PSN server simply tick the **PSN Out** checkbox for the targets you want to broadcast in the **Targets** tab. In the top left of the screen press **Start PSN** to start outputting target positional information over PSN.

NOTE: By default Follow-Me will assign PSN ID 0 to target 1, ID 1 to target 2 etc. You can double click the PSN ID to change it to what you want it to be.

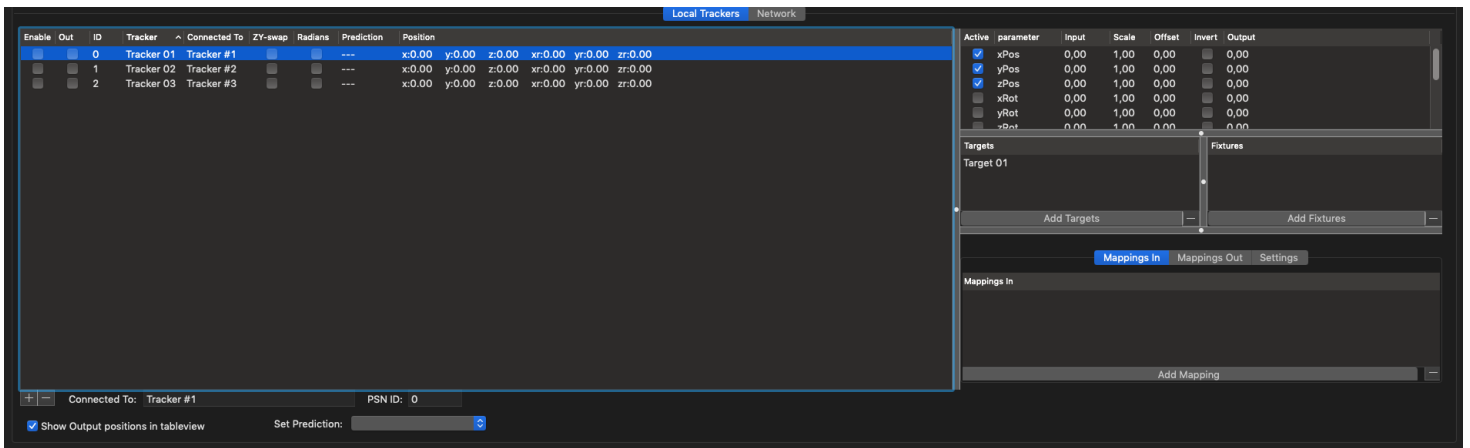
Follow-Me receiving PSN

When your show is using an automation system such as Navigator or Kinesys, they likely provide the option to send PSN information. In Follow-Me, we're able to receive this information and link it to targets or to fixtures. This allows you to use PSN to track a performer in for example a flying rig, or to link positional data to the fixtures when trusses are moving during the show.

Linking PSN to Targets

To enable the use of PSN to track targets we need perform a few steps. Before you start, please make sure that **PSN out** is disabled for your targets in the **Targets** tab.

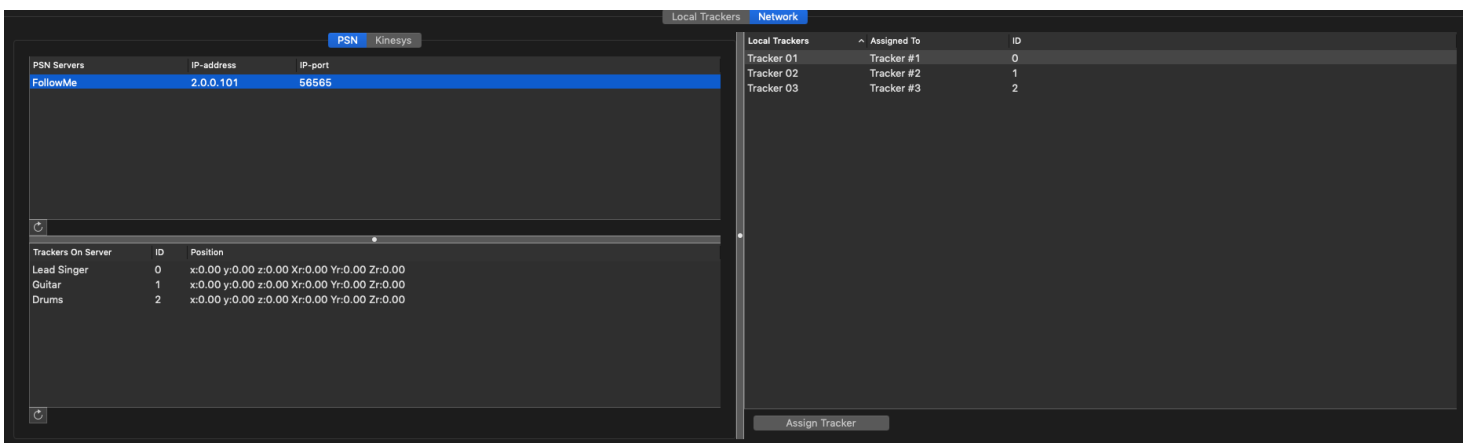
1. Go to the **PSN** tab, under **Connectivity**.
2. On the **Local Trackers** sub-tab use the **+** to add as many local trackers as you have targets you want to link to.
3. Select Target 01 on the **Targets** tab, and then select Tracker 01 on the **PSN** tab.
4. Click **Add Targets** at the bottom of the Targets box on the right side. The selected target will now get added in the Targets box. You have now linked a local tracker to a target.
5. Repeat step 6 and 7 for each target that you have.



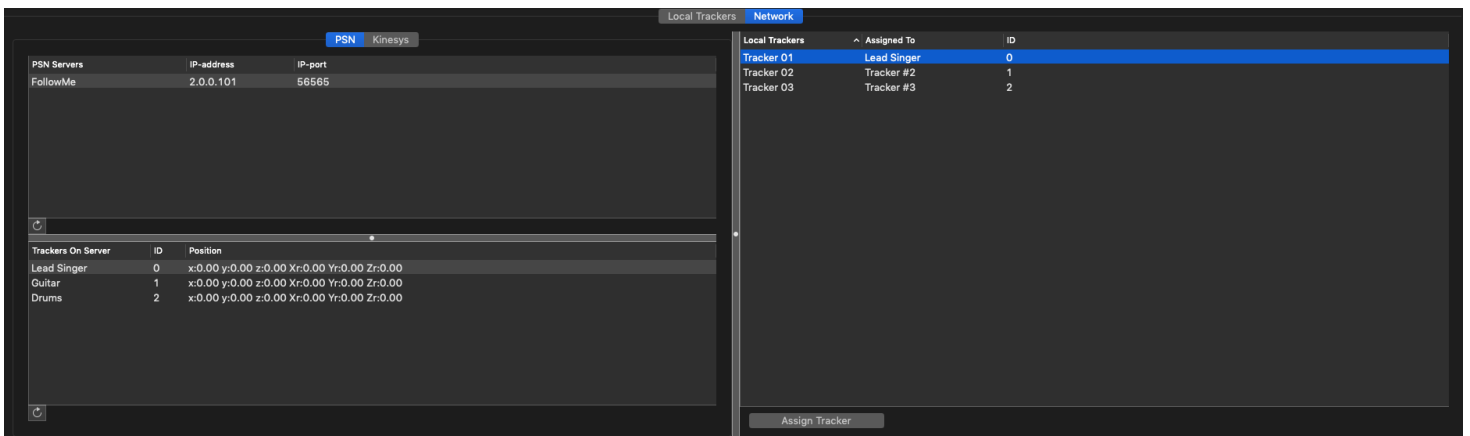
By default Follow-Me will add all the parameter options there are for the PSN data except for the xRot, yRot and zRot. The available PSN parameters are shown at the top right when a tracker is selected. You can untick any parameter you don't want to use. This gets stored in the showfile.

6. Select the **Network** sub-tab. This will show you all available PSN servers in your network on the left and your local trackers on the right.
7. Select the server you want to use. At the bottom left you will now see the available trackers on the selected server.

In our example we see Lead Singer with ID 0, Guitar with ID 1 and Drums with ID 2



11. Select "Lead Singer" from the trackers On Server list then select Tracker 01 in the Local Trackers list and press **Assign Tracker**.
12. You will now see that the Assigned to column has changed from Tracker #1 to Lead Singer. Your target has successfully been linked to the PSN tracker.
13. Repeat step 11 for each Target.

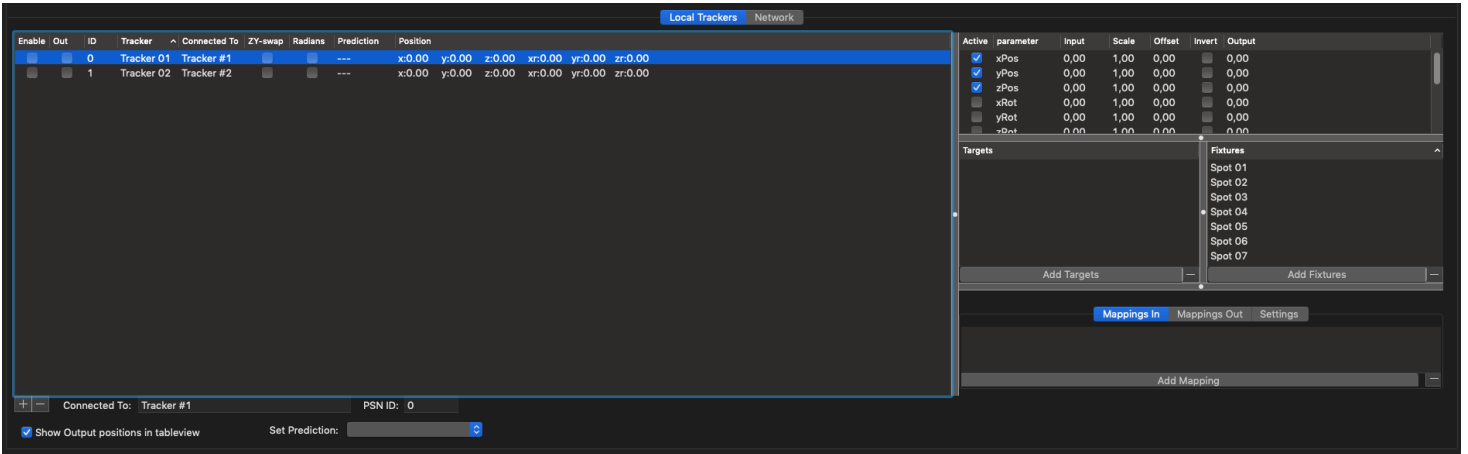


WARNING: Make sure that the **PSN out** checkbox in the **Targets** tab is not checked to receive PSN for a target!

PSN linked to Fixtures

To enable the use of PSN to update fixture locations we need to perform the following steps:

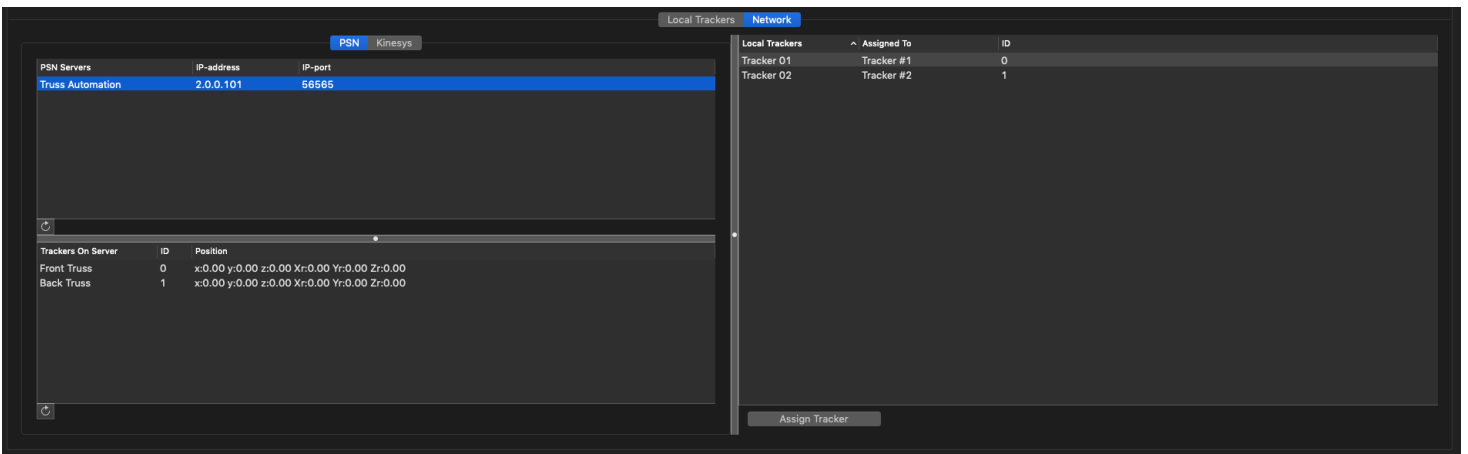
1. Go to the **PSN** tab, under **Connectivity**.
2. On the **Local Trackers** sub-tab use the **+** to add as many local trackers as you need.
3. Select the fixtures you want to assign in the **Fixtures** tab, then select Tracker 01 in the **Local Trackers** tab.
4. Click **Add Fixtures** at the bottom of the Fixtures box on the right of the Local Trackers window. The Fixtures will now get added in the Fixtures box.



By default Follow-Me will add all the parameter options there are for the PSN data except for the xRot, yRot and zRot. The available PSN parameters are shown at the top right when a tracker is selected. You can untick any parameter you don't want to use. This gets stored in the showfile.

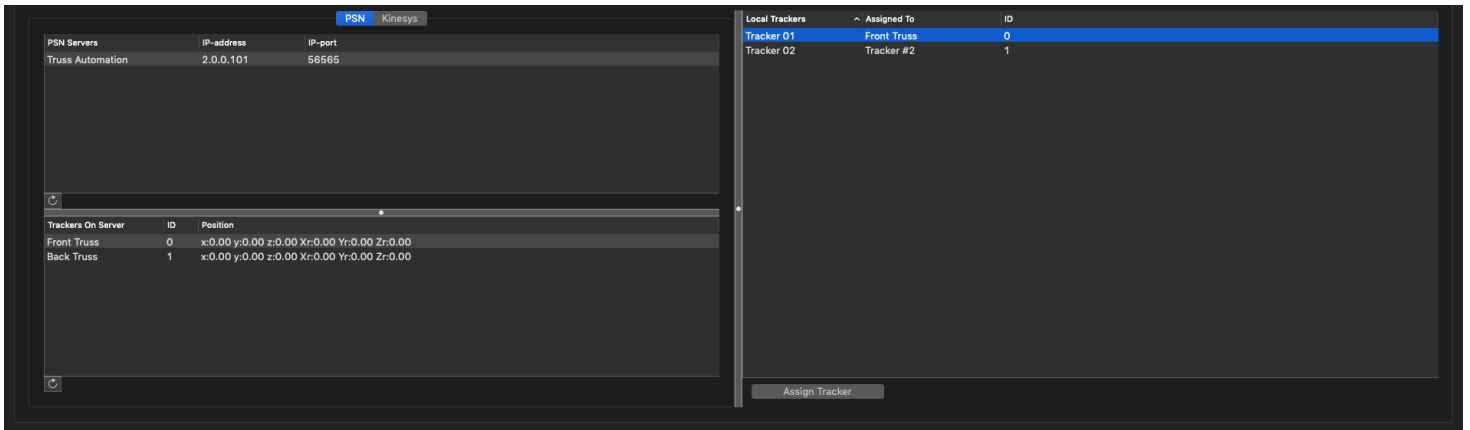
NOTE: Some automation systems provide the Pitch, Roll and Yaw of the trusses. Please be aware that xRot, yRot and zRot need to be enabled in order to receive this information over PSN. **NOTE:** In some cases you might receive degree information or radians information for the xRot, yRot and zRot. This can be set with the Radians checkbox for each Local Tracker. By default this is unchecked and Follow-Me will work with degrees.

5. Select the **Network** sub-tab. This will show you all available PSN servers in your network on the left and your local trackers on the right.
6. Select the server you want to use. At the bottom left you will now see the available trackers on the selected server. In our example we see the Front Truss with ID 0 and the Back Truss with ID 1



7. Select "Front Truss" from the trackers On Server list then select Tracker 01 in the Local Trackers list and press **Assign Tracker**
8. You will now see that the **Assigned to** column has changed from Tracker 1 to Front Truss. Your local tracker has successfully been linked to the PSN tracker.

9. Repeat step 7 for each tracker.



You've now successfully linked your fixtures to a PSN tracker. Once this tracker is enabled, the fixtures assigned to the PSN tracker will have its location automatically set to what the automation system is outputting to us over PSN.

It is important to note that your fixture likely has an offset from the PSN tracker location, as found in the image below. You can set this offset in the **Fixtures** tab, press the **PSN Tracker Offset** button to fill in this offset.



Considerations for using automation systems with FM

- Your fixture is likely to have an offset from the PSN tracker location. You can set this offset in the **Fixtures** tab by pressing the **PSN Tracker Offset** button.
- Keep in mind that Follow-Me is dependent on receiving accurate positional information from the automation system. If these numbers received over PSN aren't accurate, Follow-Me will not be able to know the correct fixture position and orientation, which could cause tracking to be off.
- Follow-Me can not compensate for a displacement of the center of the truss caused by an automation system, see the image below. If the displacement is large, Follow-Me will thus receive inaccurate position numbers of the truss over PSN which could cause tracking to be off.
- When your fixture is oriented differently (such as a 90 degree zRot), you can enter this in in two different locations in the software:
 1. For a single fixture, do this in the **Temporary deviation** box in the **Fixtures** tab. Do not fill in this information in the Fixture position & orientation box, as the values in that box are overwritten by the parameters received through the enabled PSN tracker.
 2. For the whole truss, do this in the **PSN Local Trackers** sub-tab. Do this by adding an offset to an enabled rotation parameter, such as 90 degrees in the zRot. All the fixtures added to this PSN tracker will have this offset added.



Follow-Me Track-iT

Introduction to Track-iT

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Follow-Me Track-iT enables you to automatically follow multiple performers with multiple fixtures each. The system is able to do so by placing Track-iT tags on the performer, which are compact wearable RF devices.

We start to setup Follow-Me Track-iT by placing anchors throughout the performance area. Typically, 6-8 anchors are required to follow in 2.5D, whilst 12-16 anchors are required to follow in 3D. The anchors are powered over Ethernet, and can be daisy-chained to each other. Just a single ethernet cable is needed per anchor for power and communication. Anchors connect through a Power over Ethernet switch with the Track-iT server. The Track-iT server connects with the base Follow-Me 3D system for setup and configuration. After measuring the position of the anchors in 3D space and after calibrating the system, we can start following the performers automatically.

Two tags are placed on a performer for redundancy purposes and for improved line of sight of the anchors. Follow-Me Track-iT provides live visual feedback of the auto-tracking process and also offers the ability for the user to take back manual control of the fixtures whenever desired. This makes Follow-Me Track-iT a truly unique hybrid tracking solution. You can always use the Follow-Me mouse consoles when tags are not possible, for example due to outfit limitations of the performer.

Track-iT System Overview

