

Working with the i-DECT and SMI RED Eye tracker

This section explains how to configure the **RED 250** eye tracker after the previous steps, and before beginning with the test.

It uses the SMI Experiment Center software, which is used to design software for gaze tracking experiments and visual stimuli presentation (<http://www.smivision.com/en/gaze-and-eye-tracking-systems/products/experiment-center-software.html>).

In our test, the Experiment Center serves to control when the calibration and validation of the eye tracker will take place, synchronizing the gaze data from the eye tracker with the messages provided by Frapper.

In the following figures the IP addresses are just for reference. **PLEASE CHECK YOUR OWN IP ADDRESSES OR CONSULT WITH YOUR IT ADMINISTRATOR.**

1. Open the "**iView X RED 250Hz**" application in the **Eye Tracker laptop**.
2. In the Network Configuration (located in the taskbar) configure the IP Addresses so a connection can be established between iView-Frapper and iView-Experiment Center. To do this in iView X go to:
"Setup -> Hardware -> Communication".

For the connection with Frapper, use the "**Remote Interface 1**".

Click the button 'Configure'. (Figure 7 – left)

In the opened window set the IP Addresses of both **Eye Tracker laptop (Listening)** and **Stimulus PC (Send UDP packets to)**, and the corresponding ports. (Figure 7 – upper right)

For the connection with the Experiment Center, we use the "**Remote Interface 2**".

Click the button 'Configure'. (Figure 7 – left)

In the opened window set the IP Addresses of both **Eye Tracker laptop (Listening)** and **Stimulus PC (Send UDP packets to)**, with different ports. (Figure 7 – lower right)

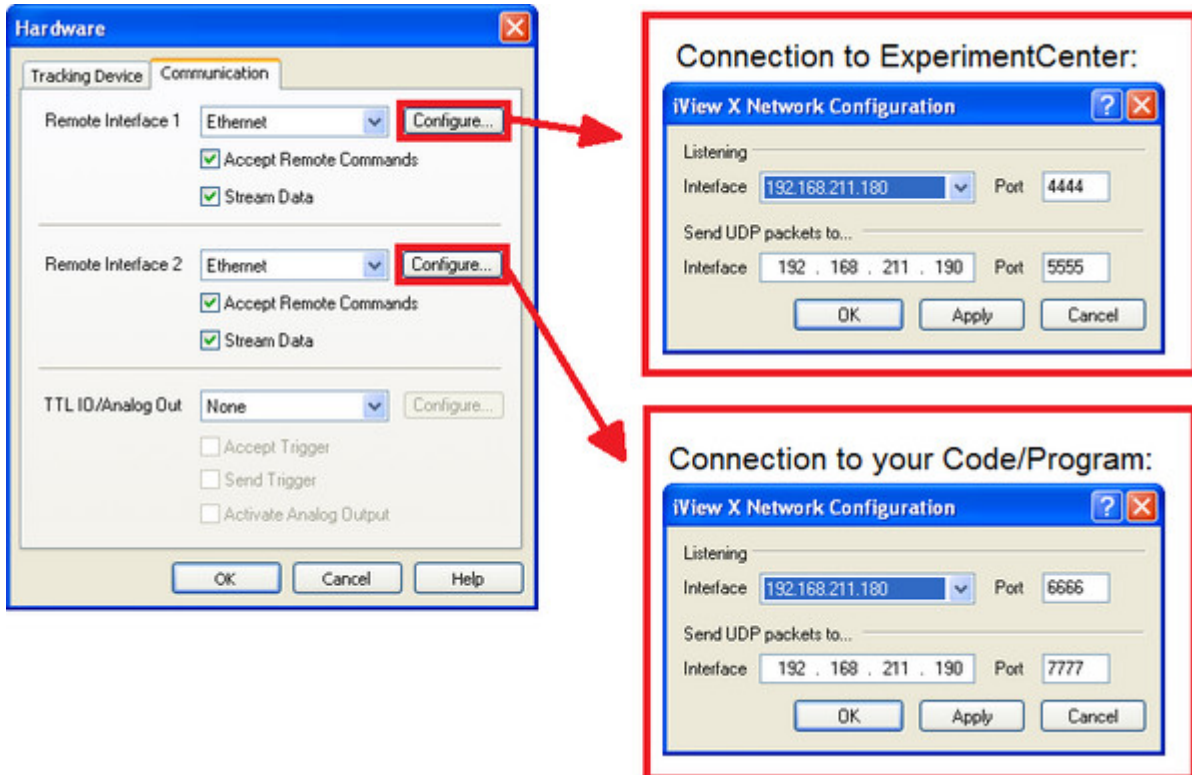


Figure 7. Configuration of the IP Addresses and Ports for the communication between Frapper and SMI Experiment Center

3. Open the **"Experiment Center"**. This is useful to synchronize .idf file and screen recording. Go to "Extras -> Global Settings".

Set the IP Addresses, as well as the paths (Experiments Path and Results Path) where the .avi and .idf files will be stored (Figure 8).

If the setup is done correctly, the icon "Disconnected" changes for "Connected".

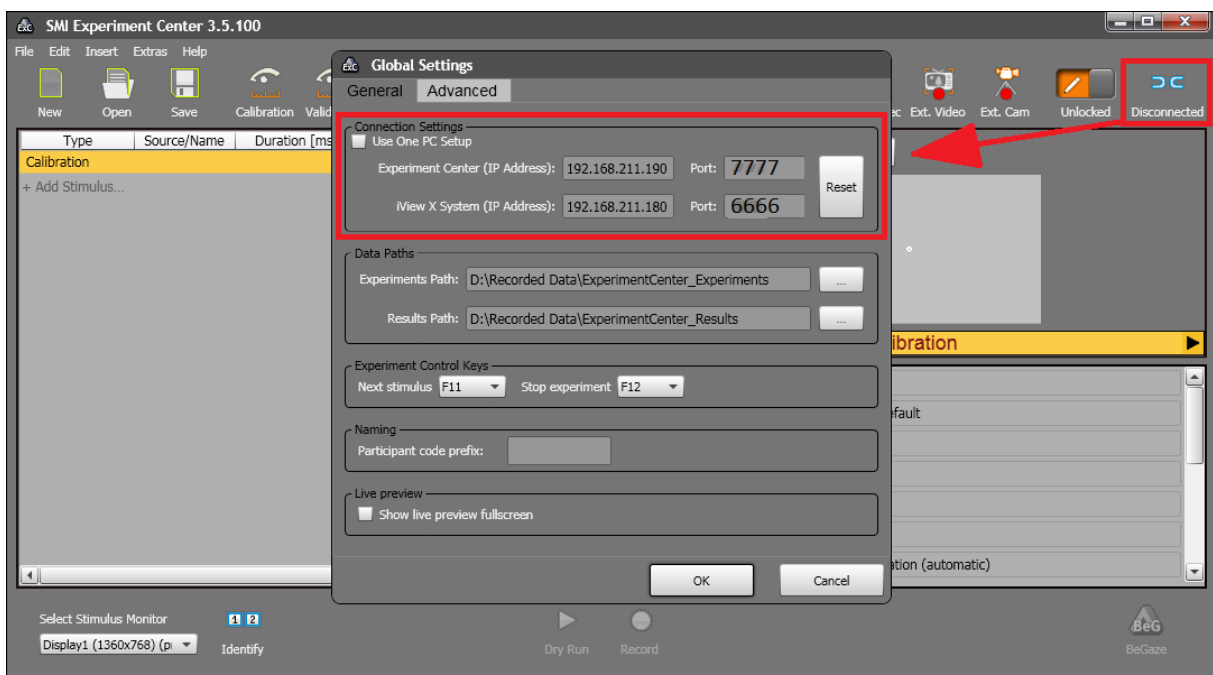


Figure 8. SMI Experiment Center – Global Settings

6. The experiment should be created with the activities: *Calibration*, *Validation*, *Screen Recording*. Note that "Record Data" should be checked only for ScreenRecording.

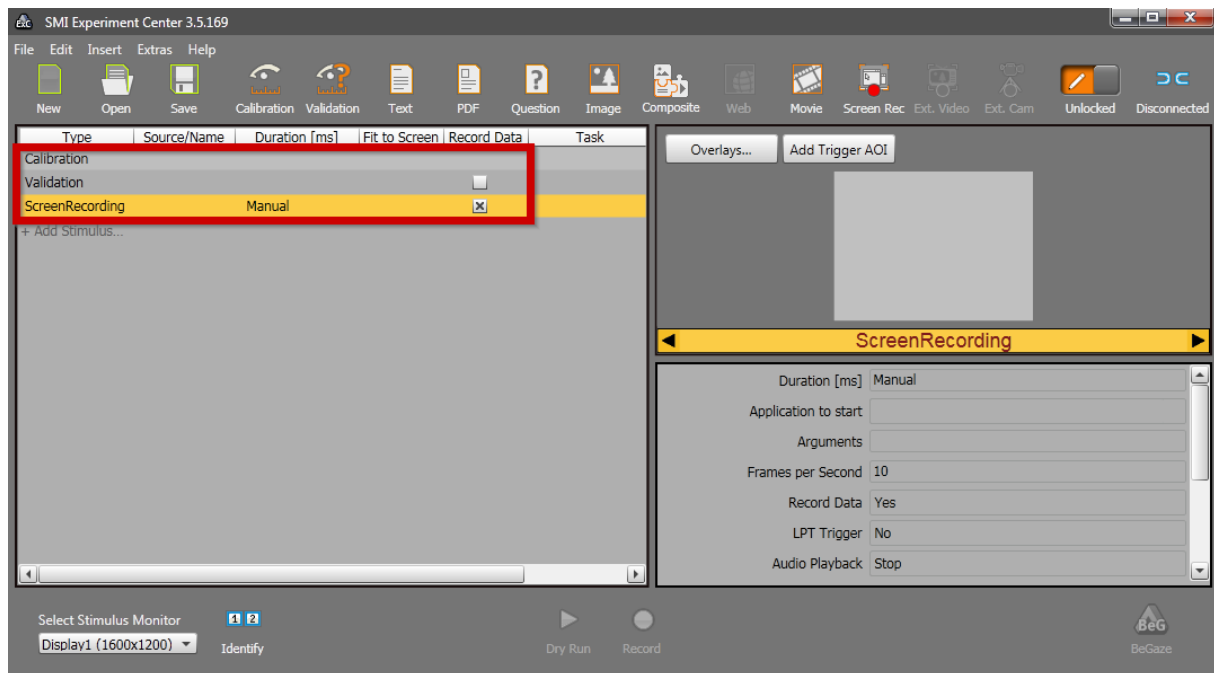


Figure 9. Activities in the experiment to be done before starting with the DECT.

In Properties, it can be changed how to start with the calibration, what type of calibration is required (5-points, 9-points) and so on.

It is important to select the Display where the test will be shown ("Select Stimulus Monitor") in case of multiple monitors.

Once all the setup for the activities is done, "Lock" the experiment and proceed to click "Record". By default, the Calibration will begin when the user presses the "Space Bar".

7. Once all that is done, go back to **Frappier**.

IMPORTANT: At this point the DECT test scene should be open, with the viewport teared and in real-time mode. For more info about it, check the manual "Running_Dect.pdf" https://research.animationsinstitut.de/fileadmin/public_docs/rnd/Projects/SARA/Running_Dect.pdf

Then, select the node "**SMIEyeTracker**". It is located in the lower part of the scene.

When the node is selected the panel should look like in Figure 9.

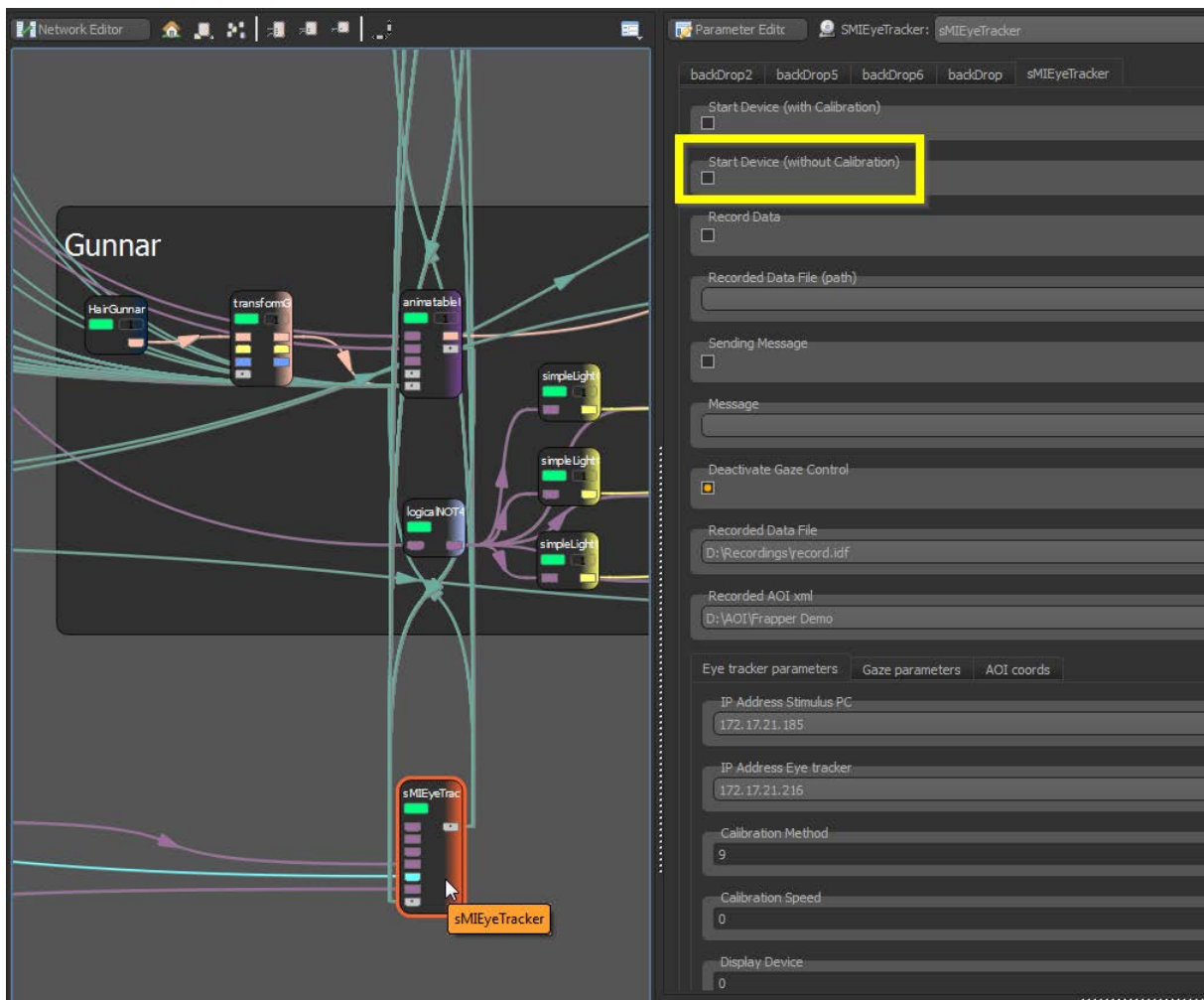


Figure 9. Frapper node "sMIEyeTracker"

Just do 2 things:

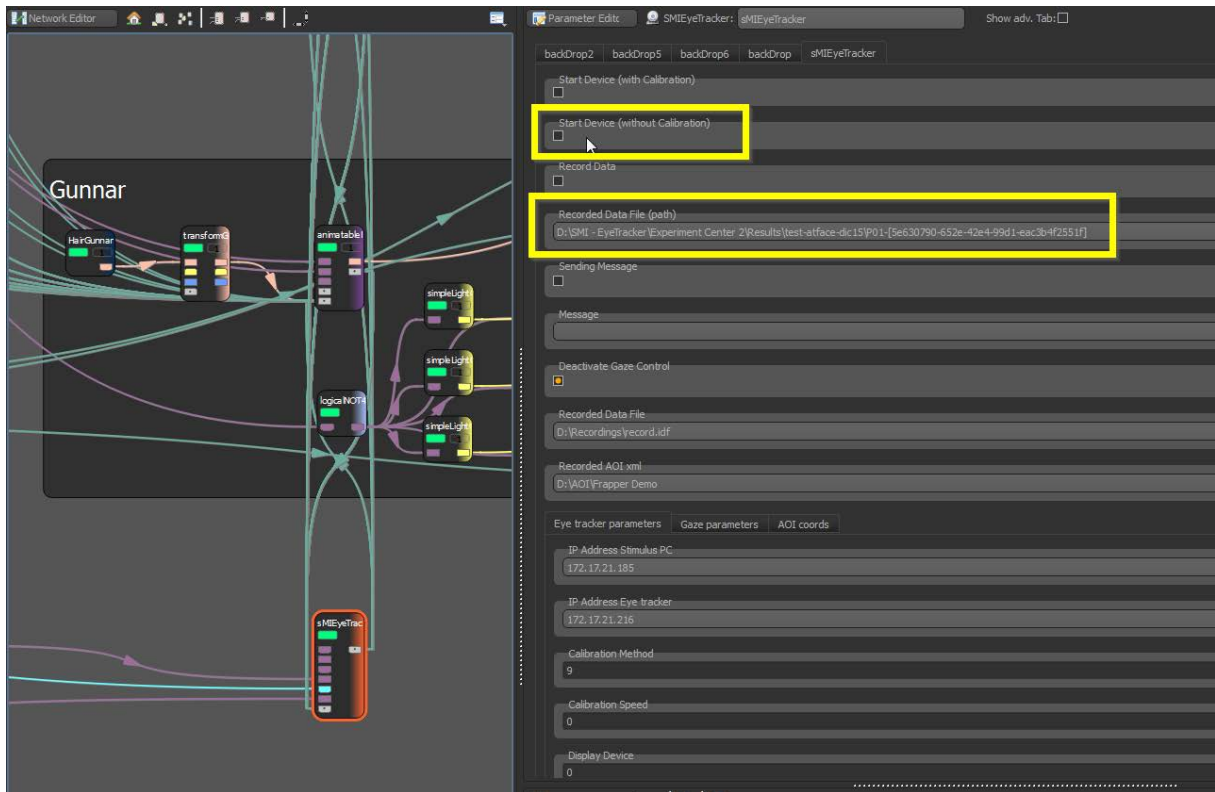
1) Introduce the path where Experiment Center is saving all the result files of the given experiment (log, txt, avi). For example: "D:\SMI - EyeTracker\Experiment Center 2\Results\test-atface-dic15\P01-[5e630790-652e-42e4-99d1-eac3b4f2551f]"

NOTE: Do not save your files to a location inside Program Files /Program Files (x86) as permission is required to write in the folder, producing errors in the output.

2) Check the field "*Start Device (without Calibration)*".

To stop the eye tracking, click once again on "Start Device (without Calibration)".

It is **not necessary** to click "Record Data" as the whole recording will be done by the "Experiment Center".



8. Go back to the teared-full screen window and press ENTER to initiate the test.