Calibration Tracking Project Setup Guide

1. Set Up the DoublescreenCameraManager Script

- Navigate to the **Cameras** object in the scene.

- Locate and open the **DoublescreenCameraManager** script component.

- Under the **Points** section, check in your project if it is divided by the **X = 0 (X_Axis)** or **Z = 0 (Z_Axis)** axis.

- Set the **Split By Axis** field accordingly.

2. Configure the Tracking Manager

- Go to **Managers > Tracking Manager** in the scene hierarchy.

- Open the **TrackingManager** script component in the inspector windows.

- Check the **Enable Tracking** checkbox.

- Set the **Path to Save the File** to the desired location for saving the calibration file.

  - This path must be the **same** in the project where the calibration will be used.

- Set the **Number of Players** to match the number of trackers you will have connected during calibration.

  - At least **one tracker** must be connected.

  - If more than one tracker is connected, **move each one individually** and observe the **UI** to identify **Tracker #1** (its position and rotation values will update in real time).

- Ensure the **Tracking** checkbox is **checked**.

  - If not, SteamVR will fail to establish a connection during build or runtime.

3. Perform the Build and Connect Trackers

- Build the project.

- Before launching it, connect the same number of **trackers** via **SteamVR** as set in the **Number of Players** parameter.

- Once connected, run the application.

4. Verify SteamVR Connection

- After launch, verify that **Position** and **Rotation** values are **not disabled** in the UI.
    - If they are disabled:
        - Ensure the number of connected trackers matches the **Number of Players**.
        - Verify that all trackers are correctly **paired** (re-pair if necessary).
        - Check SteamVR settings and reconfigure if needed.
        - Restart SteamVR or consult documentation if the issue persists.

5. Run the Calibration Process

- With the project running and tracking confirmed, click **Start Calibration Process**.
- Complete the five guided steps:
    1. **Steps 1 to 4**:
        - Place the tracker **at the center of each projected circle marker**.
        - Make sure not to **block the base stations' view** of the tracker.
        - Click **OK** to proceed to the next step.
    2. **Step 5**:
        - Place the tracker at a **height of 1 meter**.
        - Use a measuring tool if possible and, ideally, perform this step with two people for accuracy.
        - If working alone, hold the tracker at the correct height and ensure it stays in view of the base stations.
        - Click **OK** to finish the process.

6. Confirm Calibration Results

- After completing the five steps, ensure that the **three calibration parameters** are no longer marked as **uncalibrated**.
- Test the calibration by **moving the cube in the scene** and verifying that its position aligns accurately with physical space.
- If results are not satisfactory, repeat the calibration process.
- In the other hand, if satisfactory click on **Save Current Calibration.**

7. Troubleshoot Calibration Failures

If calibration still shows as uncalibrated or produces incorrect alignment, possible causes include:

- **Incorrect tracking position** during one of the five steps

    o *Solution: Repeat the calibration carefully.*

- **Human error** in tracker placement

    o *Solution: Repeat the process with more precision.*

- **Bad projection alignment**

    o *Solution: Manually adjust by slightly offsetting the tracking positions to form a proper quadrilateral (ideally with near-90° angles), or re-align the projectors.*

8. Override Consistency Check (Last Resort)

- If the issue persists and cannot be resolved through recalibration or projector alignment:

    o Open the **TrackingManager** script.

    o **Comment out** the line responsible for the calibration consistency check, line 283, and take out everything inside the if condition.

    o **Warning**: This will allow a badly calibrated result to pass through, which can lead to significant inaccuracies in the tracking. It is **not recommended** unless absolutely necessary.