

ZYLIA 6DoF Concert Hall Demo Manual

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Overview

The ZYLIA Concert Hall 6DoF Demo is a VR scene, with two music bands which allow the user to test the 6DoF technology. Developed with Unreal using the SteamVR platform, tested on the HTC Vive VR headset and Oculus Quest.

Binaural sound is generated by Max MSP renderer based on listener position sent through OSC protocol from Unreal application. The user can move inside the scene simply by walking or using controllers.

Controls:

- Menu button - opens the menu in the application;
- Trigger - teleport and menu selection;
- Touchpad - movement and rotation.

Workflow Summary

Steps necessary to run the Demo:

1. Connect the VR headset to your computer.
2. If you want to use Oculus Quest headset you need to install Oculus software.
3. Configure the setup for SteamVR or Oculus.
4. In case of Oculus Quest you have to enable unknown sources in Settings/General in Oculus application.
5. Open the Max MSP application, click DAC and Play.
6. Open the Unreal application.

System requirements

Component	Recommended system requirements	Minimum system requirements
Processor	Intel Core i5-4590/AMD FX 8350 equivalent or better	Intel Core i5-4590/AMD FX 8350 equivalent or better
GPU	NVIDIA GeForce GTX 1060, AMD Radeon RX 480 equivalent or better	NVIDIA GeForce GTX 970, AMD Radeon R9 290 equivalent or better
Memory	4 GB RAM or more	4 GB RAM or more
Video output	HDMI 1.4, DisplayPort 1.2 or newer	HDMI 1.4, DisplayPort 1.2 or newer

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ZYLIA 6DoF Concert Hall Demo

USB port	1x USB 2.0 or newer	1x USB 2.0 or newer
Operating system	Windows 7 SP1, Windows 8.1 or later, Windows 10	Windows 7 SP1, Windows 8.1 or later, Windows 10

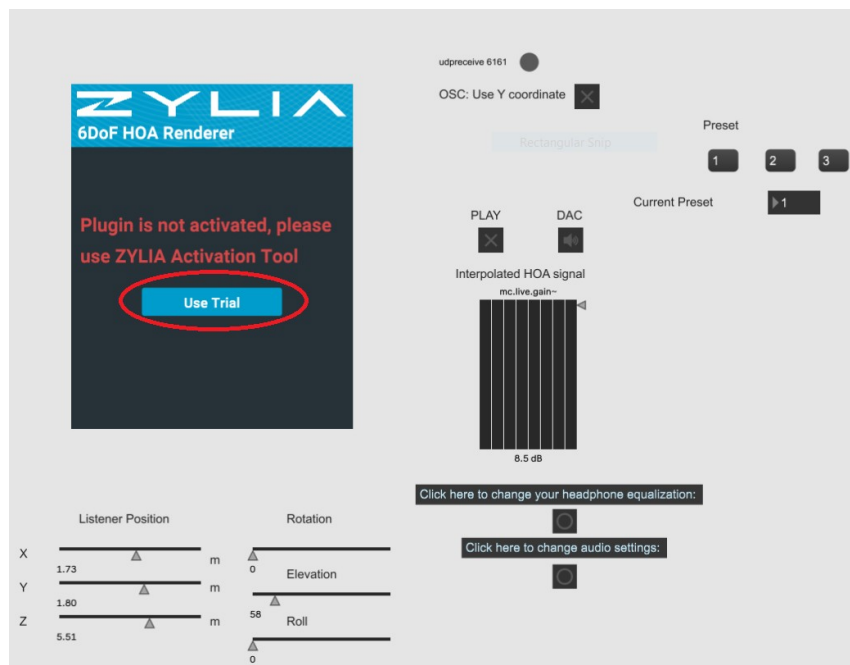
Before starting the Demo, SteamVR should be set up to assure the correct calibration of the scene which allows the user to experience the 6DoF technology as it meant to be. This is the standard procedure for HTC Vive configuration, if you don't have experience with it, you can go to section SteamVR Setup. In case of Oculus Quest you need to calibrate floor and boundaries - setup will be launched after you wear headset for the first time.

MAX MSP plugin

1. If your trial was expired, before running the application, you need to activate using the key provided by ZYLIA. You can write an email to support@zylia.pl, to get one.

To activate the plugin you need to run ZYLIA 6DoF Activation Tool, and put the provided key to application and click *Activate*

2. Launch *Zylia_6DoF_Concert_Hall_Demo_Audio* application, if you are using a trial, you need to click *Use Trial* in ZYLIA 6DoF HoarRender box.

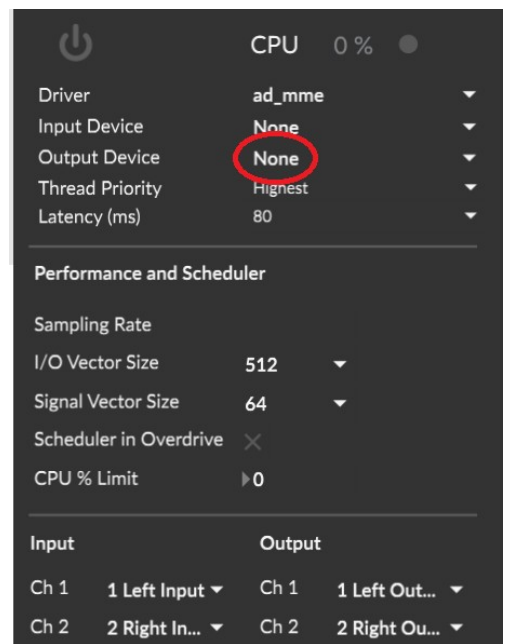
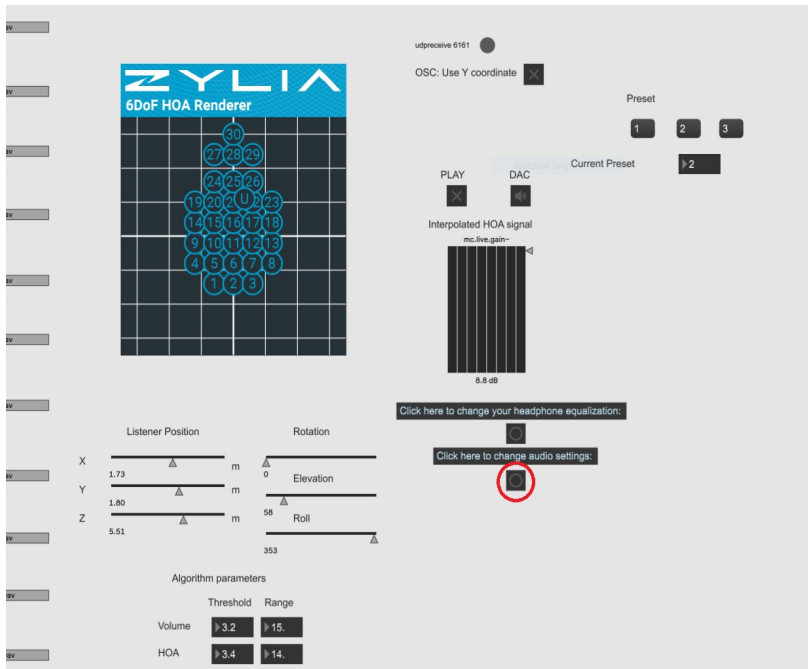


3. Change the MAX output device to your playback device by clicking on the marked button. **Remember to set up correct sampling rate, which is for our recordings 48000Hz:**

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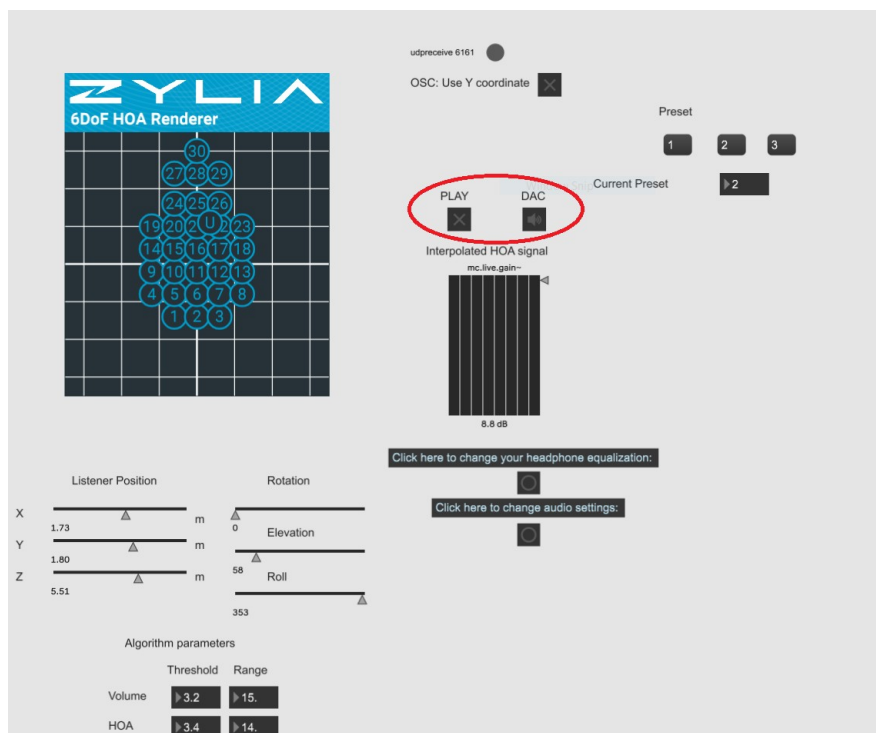


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4. Optionally setup headphone equalization, if your headphones are in the list it can increase the spatiality of the experience.

5. Click *DAC* and *Play* buttons.



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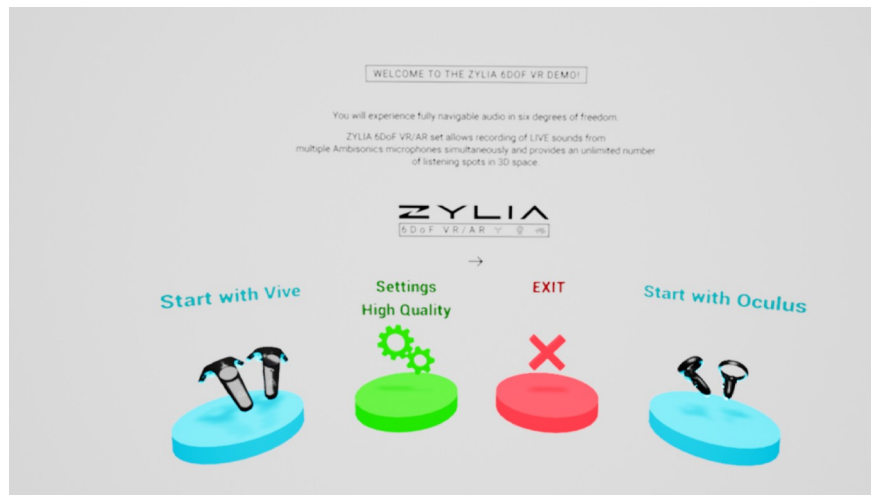
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Launching VR application

1. Launch *ZYLIA_6DoF_Concert_Hall_Demo* application
2. In the menu you can choose your controllers and quality settings (it only affect the visuals). You interact with each position by putting your controller close to the option. Also in this scene you are able to read about the demo and see the controllers setting.

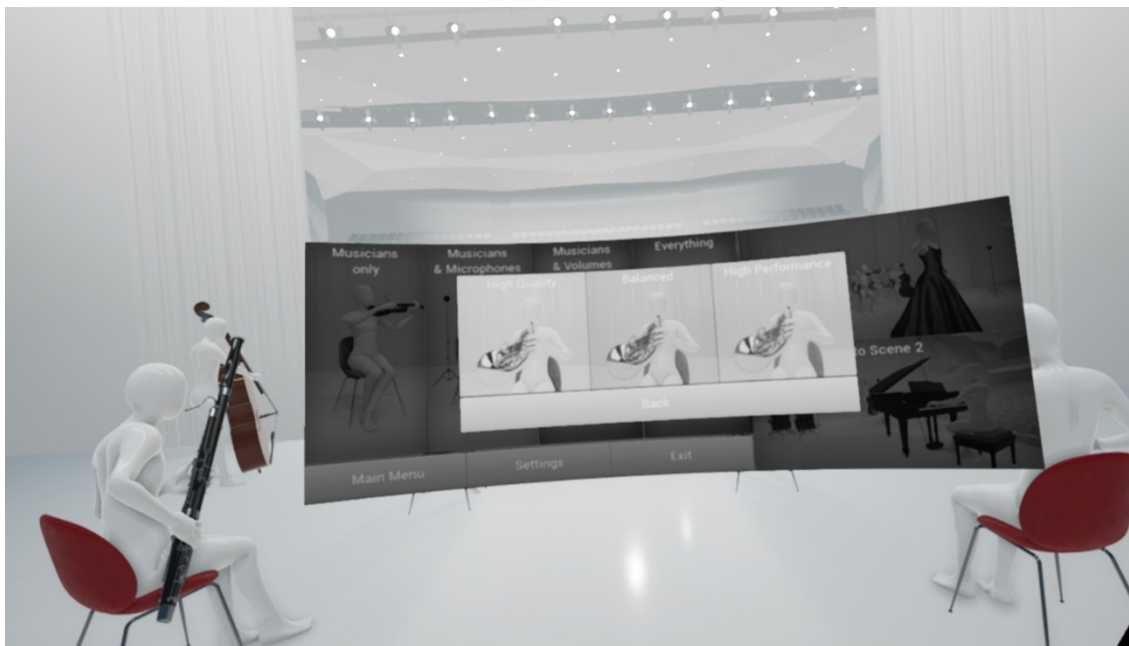


3. After choosing the controllers you are moved to the scene with the orchestra. You should immediately hear sound in your headphones. If not, check that in the Max MSP application has correctly set an audio device, and the Play and DAC switches are on.
4. In the application you can move and listen to the 6DoF Audio, also when you click the menu button, you will see the menu, where you can move to the other scene, set the visualization settings (like turning off, the audio sphere or microphone visualization). You can also change the visuals setting or go back to the starting scene. To choose elements, you need to aim it and click the trigger.



ZYLIA 6DoF Concert Hall Demo

5. Enjoy your 6DoF experience!



If you experience any problem with the ZYLIA 6DoF Concert Hall Demo or you have a question regarding the technology, please write to support@zylia.pl

SteamVR setup

Steam VR room configuration should be performed at every new event to get the playable area set up. It is necessary to do this in each new venue to ensure that the boundaries are set up correctly.

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ZYLIA 6DoF Concert Hall Demo

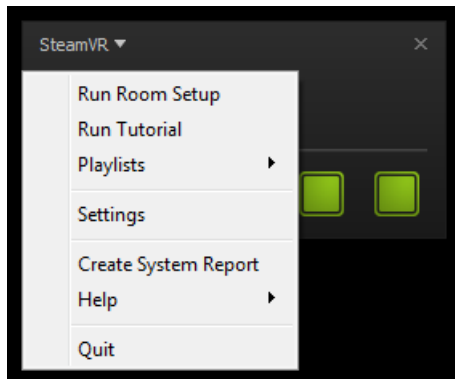
1. Make sure that at least 6.5 FT X 5 FT (2 m x 1.5 m) is available free to use for the virtual space
 - Users should be able to walk around freely in this space. Ensure that there are no obstacles that will interfere with the user's experience.
1. Make sure that Vive Light Houses (Base Stations) are in a stable location in opposite corners of the play area.
 1. Base stations have a field of view of 120 degrees.
 2. Base stations need to be set at a 30-45 degree angle towards the floor.
 3. The maximum distance between stations is 16 FT.
 4. Base stations need to be in direct, unobstructed, view of each other
 5. Each Base station needs a power source
2. The headset needs to be set up
 1. The headset requires 3 cables plugged into the link box which are color-coded by ORANGE
 - Orange HDMI
 - Orange USB
 - Orange Power
 1. Link box plugs into the computer and a power source
 - HDMI to computer
 - USB to computer
 - Dedicated Power Source
 1. Place Headset in center of set up space
2. Start Steam VR
 - Steam requires an internet connection or should be set up with Offline Mode already enabled
1. Controllers should be placed in the center of the room
 - Power on controllers by pressing System button (lowermost button on the controller)
1. Room set up should automatically launch
 1. If Room Setup does not launch automatically

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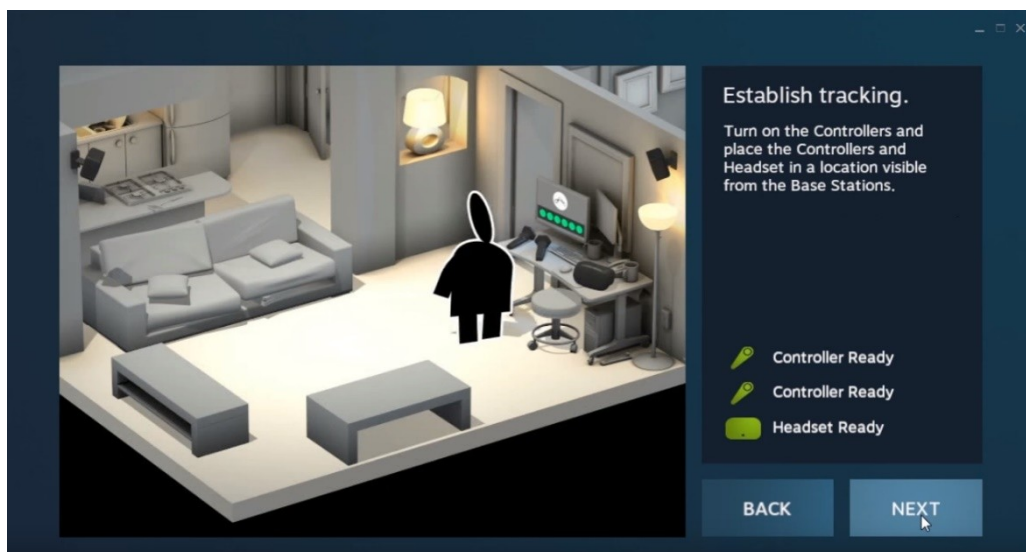
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- Click SteamVR menu button
- Select "Run Room setup"



1. Inside SteamVR Room Setup

1. Select Room-Scale
2. Make sure that Headset and Controllers are placed in the center of the established play area
 1. Controllers and Headset should be lit up green in the interface



3. Next step will locate your monitor
 1. Use any controller
 2. Point controller towards the main monitor
 3. Press and hold the Trigger while pointing towards the monitor
4. Calibrate the floor level
 1. Place both controllers at least a foot away from each other



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2. click the "Calibrate Floor" button in the SteamVR interface on the computer
3. This will set the lowest height in SteamVR
5. Measure your space
 1. Use one of the controllers to trace the playable space
 - This will set the boundaries of the play area.
 1. Use the controller as you would a paintbrush to trace the boundaries of play.
 2. Keep in mind the boundaries of available space, we don't need users to overstep this and hit equipment.
 - If users get close to this boundary they will see a grid or, if enabled, see an overlay from the headset's camera of their surroundings.
 - You will see on the computer interface all of the Light Houses, Controllers, and Headset in a real-time view.
1. Set your play area
 1. After tracing the play area you will see a green box on the SteamVR interface
 2. This is going to be the boundaries that the user will be in
 3. if there is not enough room, the square will be red.
 - If this happens make sure that the area you have set up is of adequate size.
 - If you are unable to create an adequate play area, go back to step 1.

