User manual for running CoCar

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Contents

1 Introduction

This is the manual for setting up CoCar and making sure the configuration is ok for being able to play the game. This document is by all means not complete, and if some parts seems to be missing, please let us know. Please email improvements to us directly.

2 Required equipment

For running CoCar in its full glory, the minimal configuration is:

1. Computer running the CoCar executable for the driver.
2. Steering wheel with pedals. In VIC we are using the Thrust Master F1.
3. Screen for the driver computer.
4. (Optional) Occulus Rift. It supports both the DK2 and the Commersial version.
5. Samsung Pixelsense also running Cocar executable for the map reader.
6. Network cable (or less preferred, wireless network)

3 Connecting the driver computer and the Pixelsense

3.1 Network

3.1.1 Via network cable (Easy solution)

Connect a standard Ethernet network cable between the two systems. The driver computer will connect to the Pixelsense on ip 169.254.185.113.

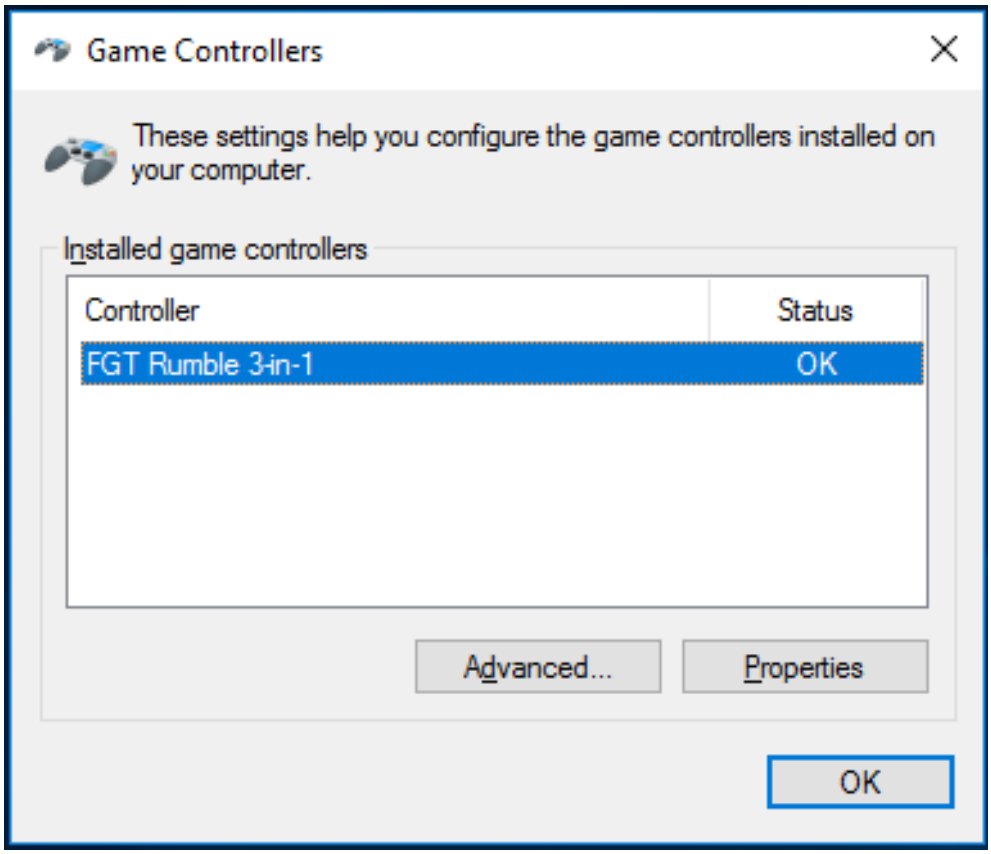
3.1.2 Wireless LAN (NOT YET POSSIBLE)

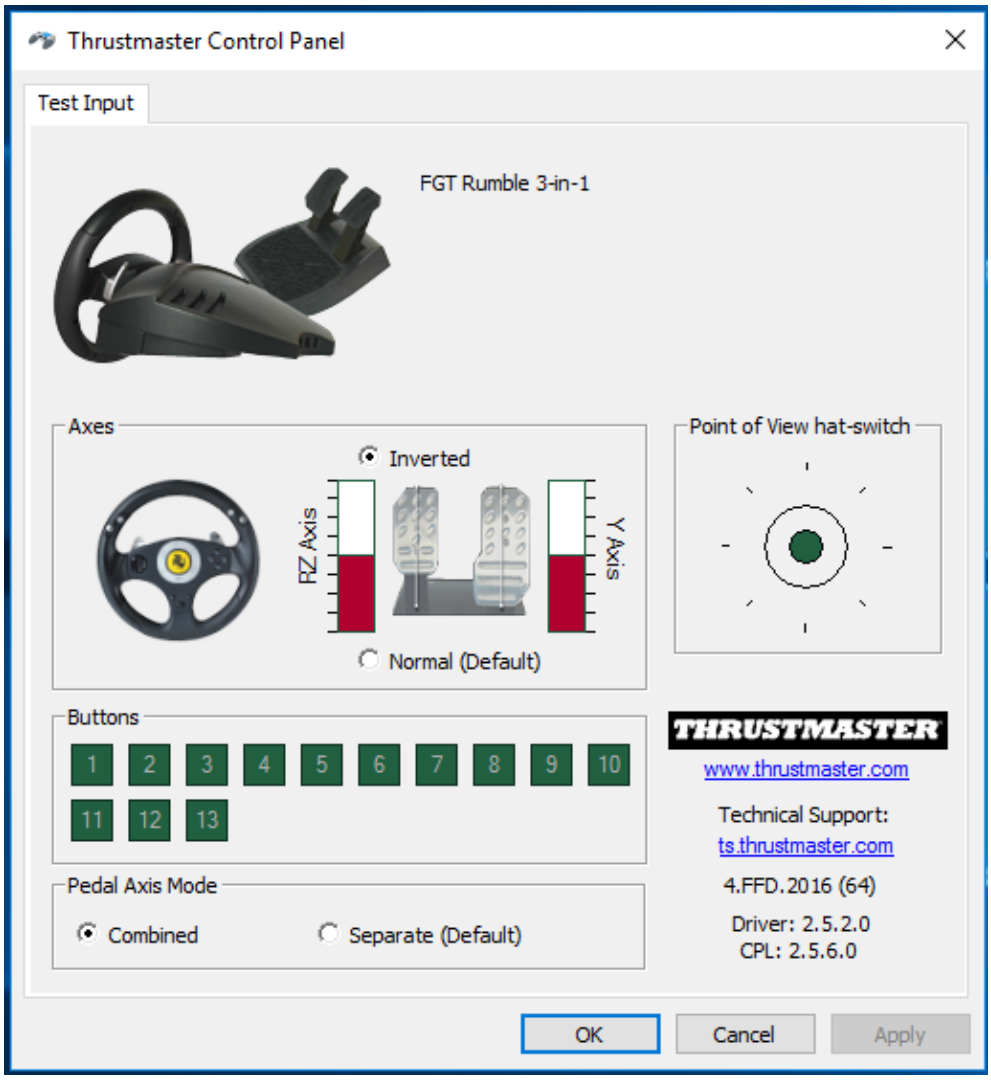
If the systems are connected via WLAN (NOT POSSIBLE yet, due to lack of a WLAN card in the driver computer), the IP address of the Pixelsense will need to be looked up, like this:

1. On the Pixelsense, click Start menu and start the program "cmd" (type cmd and hit enter, and it will start the Windows terminal prompt)
2. type in the command "ipconfig" and hit enter.
3. Look for the section "Wireless LAN adapter".
4. The ip of the Pixelsense is the IPv4 Address listed here. (XXX.YYY.WWW.ZZZ)
   (a) If both systems are connected to EDUROAM, the IPv4 address will probably begin with 130...
   (b) If both systems are connected to VIC network, the IPv4 address starts with 192.168...
5. Write these numbers on a piece of paper. They will be needed more than once.

3.2 Configuring the steering wheel (Only the driver computer)

1. The Thrust Master has a small red switch. This should be set to PC.
2. Making sure the pedals work as expected requires a few checks.
   (a) Click the Start menu and start the program Game Controllers.
   (b) There the Thrust Master should be listed. Click Properties.
   (c) On the bottom of the window, check the "Combined" checkbox for the pedals. This should make the LED on the steering wheel turn green. (If it was already green, click "Separate" and then "Combined" again just for making sure the axis configuration is up to date with the drivers, for safety measures).
3. Turn the steering wheel and press the pedals to check that the steering triggers, and when pushing the pedals, only one of the bars should move (since they are combined).





3.3 Configure Occulus (Driver computer only)

3.3.1 Occulus DK2 (The old one that looks like it has endured years of torment)

1. Connect the Occulus system (Goggles + IR-transmitter + all the mess of cables to the computer.
   (a) Headset connects to the computer with booth a USB cable and a HDMI cable.
   (b) The IR transmitter connects to the computer with an USB cable, and to the headset with a small audio-like cable.
2. Turn the headset on, so that the led on the headset lights up (most probably Yellow, but blue is also more than ok).
3. Start the Occulus Rift application. It is needed in the background for the Occulus to work at all.
4. The LEDs on the Headset and the IR transmitter should now be BLUE.

3.3.2 Occulus Rift (the new, shiny thing that is more expensive and somewhat more comfortable

1. Connect the Occulus system (Goggles + IR-transmitter)
   (a) Headset connects to the computer with booth a USB cable and a HDMI cable.
   (b) The IR transmitter connects to the computer with an USB cable.
2. The Occulus Rift has auto on/off when put on the head
3. Start the Occulus Rift application. It is needed in the background for the Occulus to work at all.
4. When the Headset is on head, there is a small white led lit.

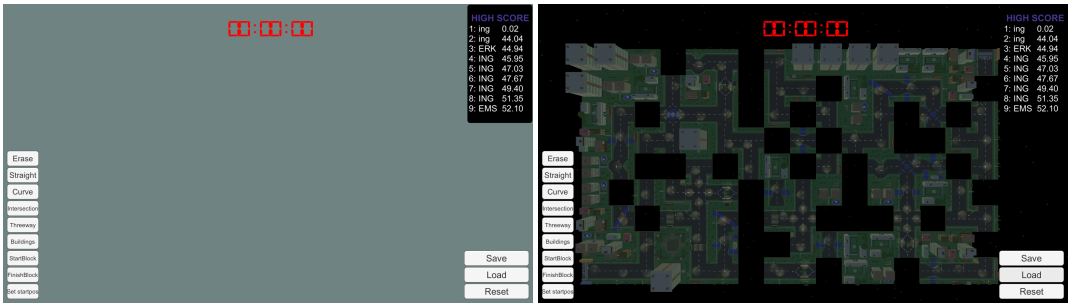
4 Running the game

4.1 Pixelsense

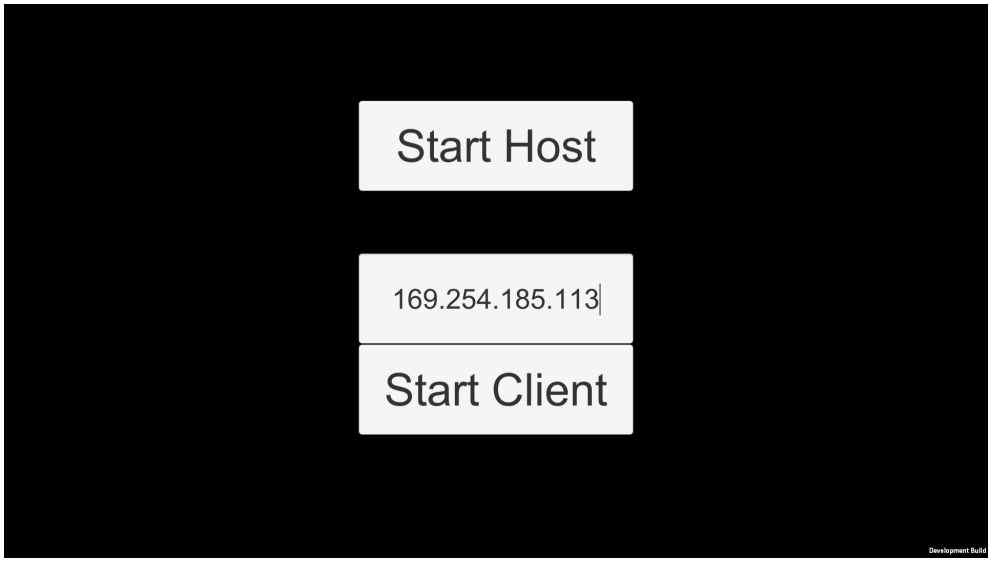
1. Navigate to the CoCar folder on the Desktop.
2. Double click run the program SurfaceToIO located in the folder. (This program is somewhat unstable, more on that later)
3. Double click run the CoCar.exe executable. A configuration box should appear.
4. Run the game in fullscreen, with high quality video setting.
5. Click the big HOST button. Now a blue whater surface should be seen.

6. The ESCAPE keyboard button toggles the user interface. Click the LOAD button, and a map should appear (It is also possible to build your own maps).

7. The Pixelsense is now ready.



4.2 Driver computer



1. Navigate to the Desktop and run the CoCar application.

2. Double click run the CoCar.exe executable located in the folder.

3. Run the game in fullscreen, with high quality video setting.

4. Enter the IP address of the Pixelsense in the box (as xxx.yyy.zzz.www) and then click the big CLIENT button. As a reminder: If a network cable is used, the IP is 169.254.185.113, and if WLAN is used, bring out your reminder paper.

5. Now, put the Occulus Headset on your head, and look around until you see a warning text. Now look in the "Accept box" a bit further down until it is fully filled.

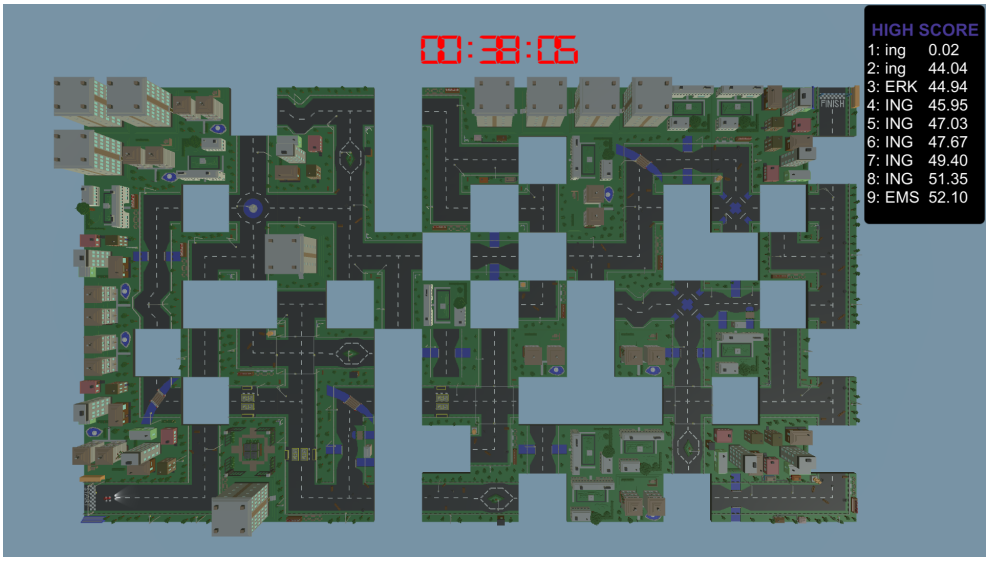
6. As soon as the driver sees the world, its time to set the default driver position. Also check that the car appeared on the Pixelsense.

7. Ask the driver to sit comfortably, reaching the pedals and the steering wheel. Now ask the driver to (in this order) close eyes, and then "look straight ahead". NOW: push c on the keyboard, and the default driver head position should be set, with rotation.

Useful keyboard keys to know about on the driver side is "c" that resets the head position, and "r" that resets the car back to the starting point.

5 Gameplay

1. The driver drives the car, like a regular car game.
2. The map reader can fill in the blanks by placing feducial markers of roadblocks on the Pixelsense that will appear in the world of the driver.
3. One possible goal of the game is to drive from start to finish faster than the high-score. If the driver reaches the goal, the time a three letters nick can be entered, and the game restarts from the start.



6 Known issues, problems and stuff to think about

This list is by no means complete, and all issues that comes up would be great to document.

1. It's not unusual that the driver will experience a phenomena called cyber sickness, which is triggered due to the fact that the brain cant match up what the eyes are telling it to the balance organs in the ears. At first sign of having a motion sick driver, take a short brake. The second time usually works much better, if it is the first time the driver is experiencing Virtual Reality.

2. During game play, the Pixelsense might stop responding to newly placed tiles on the map. This is unfortunately due to the SurfaceToIO application regurlary crashing (boooo, people should write programs that are bug fre... hah, wont happen). This issue is fixed by Alt-Tab:ing out to the CoCar folder and restarting SurfaceToIO again.

7 Contact information

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8 Update log

- Document version 1.1 Some pictures and fixes.
- Document version 1.0