User Manual

Setting up the EVs

- Connect each of the EVs to iSpace Wi-Fi. Password "QWERTYUI". The EVs have fixed IP, so it will always be the same.
- Connect control Station to iSpace Wi-Fi. Check PC IP, it will be needed for next step.
- Enter correct communications parameters in the Simulink program (Sending and receiving UDP ports). The "Remote IP" will be that of the control station. Both sending and receiving ports will be the same for each EV.

EV	IP	EV3_PortNo	EV3_OptitrackPortNo
1	192.168.1.101	25001	25011
2	192.168.1.102	25002	25012
3	192.168.1.103	25003	25013
4	192.168.1.104	25004	25014

- Download program to EV.
- Place EVs on the track.
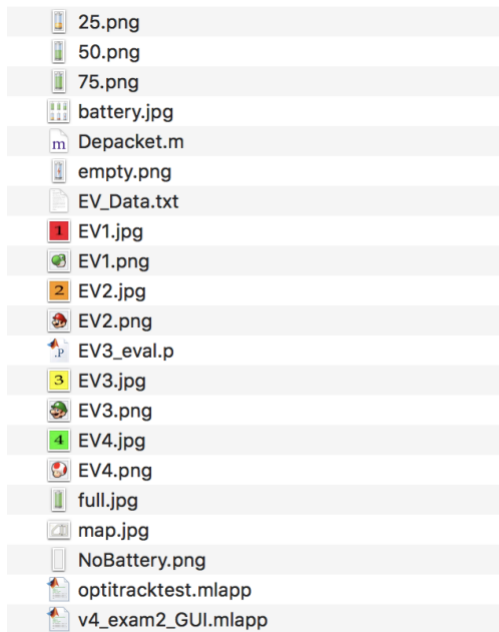
Setting up the OptiTrack

Hardware
- Clear the area of the map
- Ensure no reflective material is present anywhere on the map
- Set up the EV3s such that all the reflective dots are in different orientations
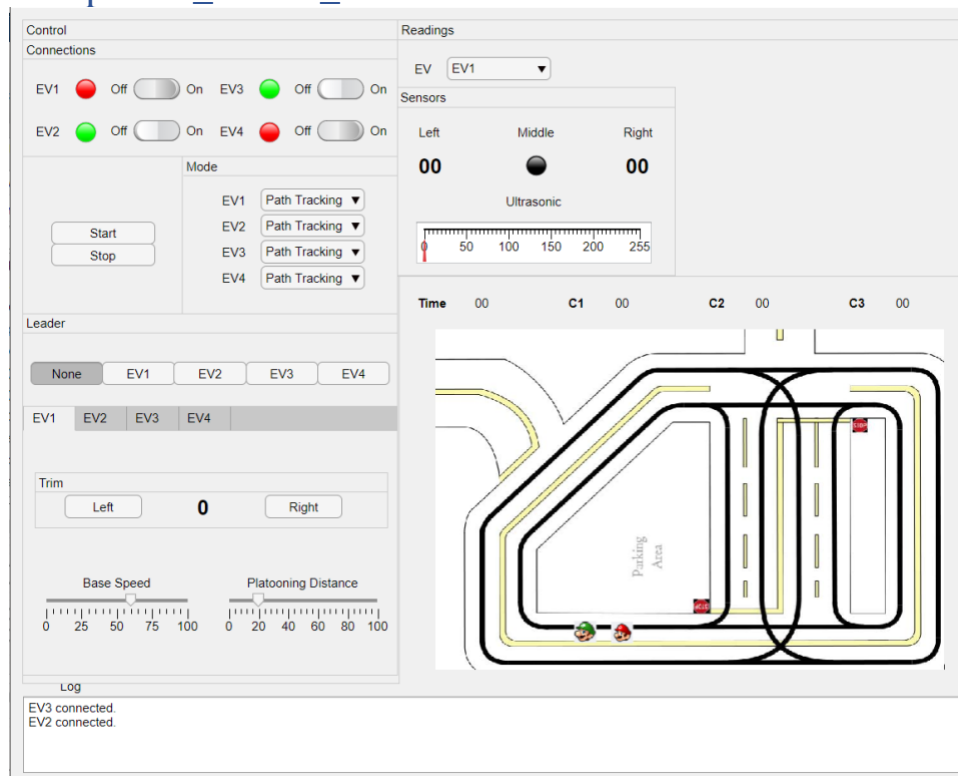- Place the EV3s along the z axis

Software
- Open TrackingTools on Host PC
- Select the trackable on the map
- Right click and select Create-Trackable
- Do this for all EV3s
- Go to orientation and click on reset to present orientation

GUI

Open Matlab and set the path to the folder with the program. The following files are needed to run it.
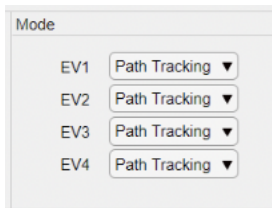
25.png
50.png
75.png
battery.jpg
Depacket.m
empty.png
EV_Data.txt
EV1.jpg
EV1.png
EV2.jpg
EV2.png
EV3_eval.p
EV3.jpg
EV3.png
EV4.jpg
EV4.png
full.jpg
map.jpg
NoBattery.png
optitracktest.mlapp
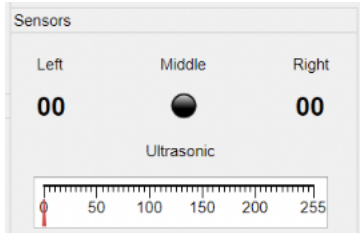v4_exam2_GUI.mlapp

- Open v4_exam2_GUI

- From there click on the switch of the EV3s you want to connect and click on start

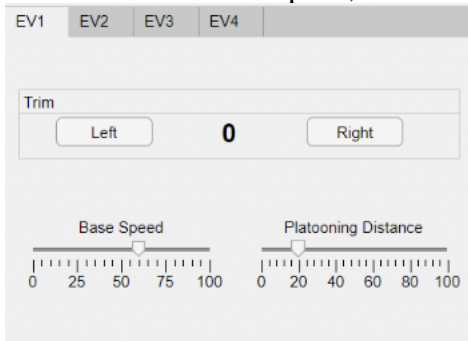- Select the mode in which you want to run the EV

- You can observe the Sensor values in the reading tab
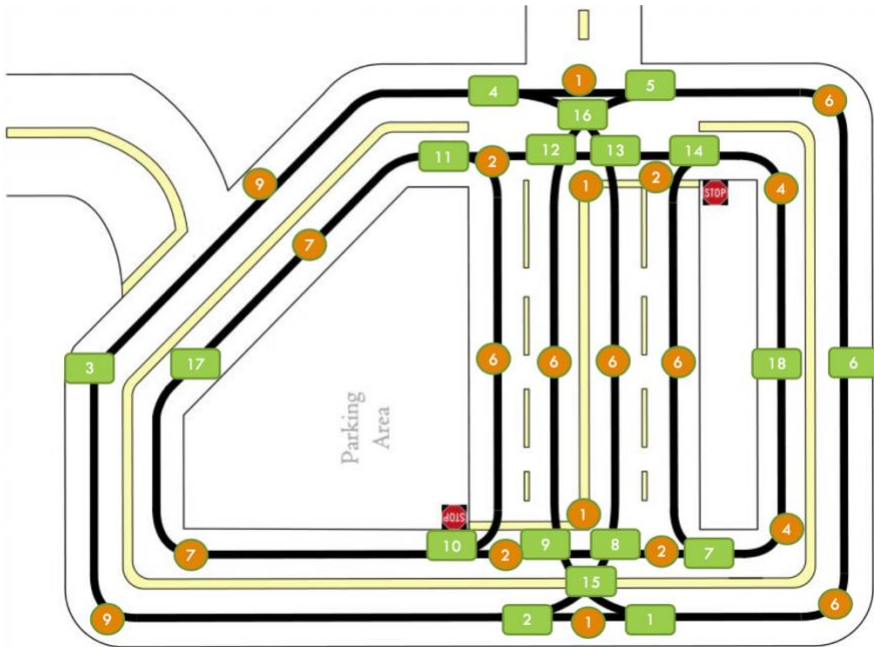

- You can observe the movement of the EV3s on the map

- You can set the base speed, trim value and platooning distance for each of the EV3s

- Change the value of the destination position to find the shortest path from the start point to the destination

EV1	EV2	EV3	EV4	S path

Source   1   ▼

Destination   17   ▼