

Lab

Task 1

Create a ros2 launch file that publishes static transforms for all carkyo sensors with respect to base_footprint frame.

You should know that:

- ❖ 1- base_footprint frame is on the ground between the 2 rear wheels.
- ❖ 2- gps_link is right over the base_footprint frame with height: 1.77m and same car heading.
- ❖ 3- lidar_link is 1.92m in front of base_footprint & 36 cm above base_footprint.
- ❖ 4- zed2_link is 1.8m in front of base_footprint & 3cm right of base_footprint & 1m above base_footprint and same car heading.
- ❖ 5- mynt_link is 10 cm behind base_footprint & 88 cm above base_footprint and 180 degree of car heading(sees what's behind the car).
- ❖ 6- imu_link is 1.8m in front of base_footprint & 50 cm right to base_footprint with height 1m. And its heading is 90 degree clockwise of base_footprint.

Required files:

- 1- launch file named : **carkyo_static_tf_launch.py**
- 2- **Pdf file** that is generated of view_frames.py



Task 2:

Create a python node that broadcasts the transform between lidar and servo to describe the motion shown in the right video.

The lidar rotates up and down with maximum 30/-30 degree and there is no translation between the server and the lidar. The output should match the left and right images.

Required file: python file named : **broadcast_lidar_transform.py**

