

## INTERSECTION CALIBRATION:

Your Duckiebot might need to be calibrated for the intersections. If that is the case, follow the instructions below:

- start the indefinite navigation, then do:
- `$ dts duckiebot demo --demo_name base --duckiebot_name DUCKIEBOT_NAME --image duckietown/dt-core:daffy`
- checkout the parameters that are set in the `unicorn_intersection_node` with:  
`rosparam get /DUCKIEBOT_NAME/unicorn_intersection_node`
- The basic idea is that we set a trim for a certain amount of time and then switch back to the state `lane_following`. To tune the intersection navigation, change the values of:
  - `/DUCKIEBOT_NAME/unicorn_intersection_node/ff_left`
  - `/DUCKIEBOT_NAME/unicorn_intersection_node/ff_right`
  - `/DUCKIEBOT_NAME/unicorn_intersection_node/time_left_turn`
  - `/DUCKIEBOT_NAME/unicorn_intersection_node/time_right_turn`
    - in order these are the values for the trim strength for left and right turn and the time for which this feed forward command is applied.
- change the parameters until you are satisfied with the behaviour with:
  - `rosparam set /DUCKIEBOT_NAME/unicorn_intersection_node/...`
  - NOTE: it makes sense to write down these values as we do not have a parameter file to save them to for now. you have to set them again once you restart `indefinite_navigation`.

## STOP LINE DETECTION TO HIGHER TIMEOUT:

When your Duckiebot goes slow (for example bc you decreased the gain), you might have to increase the timeout for the stop line detection, otherwise the Duckiebot might detect a stop line when it is still in the intersection and therefore will stop. Follow the instructions below to do this.

- start the indefinite navigation as above, then do:
- `$ dts duckiebot demo --demo_name base --duckiebot_name DUCKIEBOT_NAME --image duckietown/dt-core:daffy`
- then change the parameter of the stop line timeout with
  - `rosparam set /DUCKIEBOT_NAME/stop_line_filter_node/off_time [TIME IN SECONDS]`