

Digital & Embedded Systems

ELEC4403

Lab Assignment 7 – Robot Driving

Points: 10

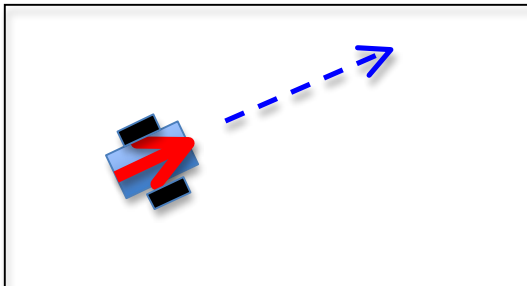
EQUIPMENT: Mobile Robot with Embedded Controller
incl. PSD sensors and motors

EXPERIMENT 1 (2 points)

Calibrate each of the 3 PSD sensors on your robot. Place the robot 10, 20 .. 100cm from the wall and record the corresponding `PSDGetRaw` values. Create an interpolated table for each sensor and enter it in the `eyebot/bin/hdt.txt` file.

EXPERIMENT 2 (4 points)

The robot is starting in a random position and orientation near the middle of the driving area. The task is to drive the robot straight and collision-free close to the wall in front, then turn to the right, so it is parallel to the wall (at the robot's left-hand side) in about 15cm distance.



EXPERIMENT 3 (4 points)

With the robot placed alongside one of the walls of the driving area in 15cm distance, drive one complete (and collision-free) loop around the driving area, always keeping a similar distance to the wall on the left-hand-side of the robot.

