EECS 476 Mobile Robotics
PS 1

Peng Xu
pxx37@case.edu

1. Source code

```
//start sending some zero-velocity commands, just to warm up communications
with STDR
  for (int i=0;i<10;i++) {
    twist_commander.publish(twist_cmd);
    loop_timer.sleep();
  }

  twist_cmd.linear.x=speed; //command to move forward
  while(timer<time_3_sec) {
      twist_commander.publish(twist_cmd);
      timer+=sample_dt;
      loop_timer.sleep();
  }

  twist_cmd.linear.x=0.0; //stop moving forward
  twist_cmd.angular.z=yaw_rate; //and start spinning in place
  timer=0.0; //reset the timer
  while(timer<1.5) {
      twist_commander.publish(twist_cmd);
      timer+=sample_dt;
      loop_timer.sleep();
  }

  twist_cmd.angular.z=0.0; //and stop spinning in place
  twist_cmd.linear.x=speed; //and move forward again
  timer=0.0; //reset the timer
  while(timer<7.5) {
      twist_commander.publish(twist_cmd);
      timer+=sample_dt;
      loop_timer.sleep();
  }

...

  //halt the motion
  twist_cmd.angular.z=0.0;
  twist_cmd.linear.x=0.0;
  for (int i=0;i<10;i++) {
```

```
        twist_commander.publish(twist_cmd);
        loop_timer.sleep();
    }
    //done commanding the robot; node runs to completion
```

2. Main idea

In a loop with specified time durations, use "publisher" as the commander to drive the robot "robot0" to move forward or spin by z axis until it arrives at the left top corner.

3. Example use

To start the simulator with

   $ roslaunch stdr_launchers server_with_map_and_gui_plus_robot.launch

Run a simple, open-loop command sequence with:

   $ rosrun my_stdr_control my_stdr_open_loop_commander

Jan. 26 2016