

Robótica Móvil

Práctica 3: Navegación

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mié 18:32
/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/bring_up/launch/robotino_simul.launch http://localhost:11311

map_server (map_server/map_server)
mobile_base (mobile_base_simulator/mobile_base_simulator.py)
rgbd_simul (rgbd_simul/rgbd_simul2.py)
robot_state_publisher (robot_state_publisher/robot_state_publisher)
rviz (rviz/rviz)

auto-starting new master
process[master]: started with pid [12719]
ROS_MASTER_URI=http://localhost:11311

setting /run_id to f26e0f12-8a6b-11ea-944f-843a4b0665d0
process[rosout-1]: started with pid [12730]
started core service [/rosout]
process[robot_state_publisher-2]: started with pid [12737]
process[rviz-3]: started with pid [12738]
process[laser_simulator-4]: started with pid [12743]
process[mobile_base-5]: started with pid [12746]
process[rgbd_simul-6]: started with pid [12747]
process[map_server-7]: started with pid [12748]
process[loc_amcl-8]: started with pid [12749]
INITIALIZING LASER SIMULATOR...
[ INFO] [1588200683.405033831]: Loading map from image "/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/config_files/occupan
cy_grids/Universum.pgm"
[ INFO] [1588200683.415789776]: waitForService: Service [/static_map] has not been advertised, waiting...
[ INFO] [1588200683.424738169]: Read a 642 X 513 map @ 0.050 m/cell
[ INFO] [1588200683.439237447]: waitForService: Service [/static_map] is now available.
[ INFO] [1588200683.441662574]: Sending map
[ INFO] [1588200683.492945540]: Requesting the map...
[ INFO] [1588200683.501047254]: Sending map
[ INFO] [1588200683.502882162]: Received a 642 X 513 map @ 0.050 m/pix
[ INFO] [1588200683.532213051]: Initializing likelihood field model; this can take some time on large maps...
[ INFO] [1588200683.563471146]: Done initializing likelihood field model.
INITIALIZING RGBD_SIMUL NODE...
INITIALIZING MOBILE BASE ...
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mié 18:32
/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/bring_up/launch/navigation_move_base.launch http://localhost:11311

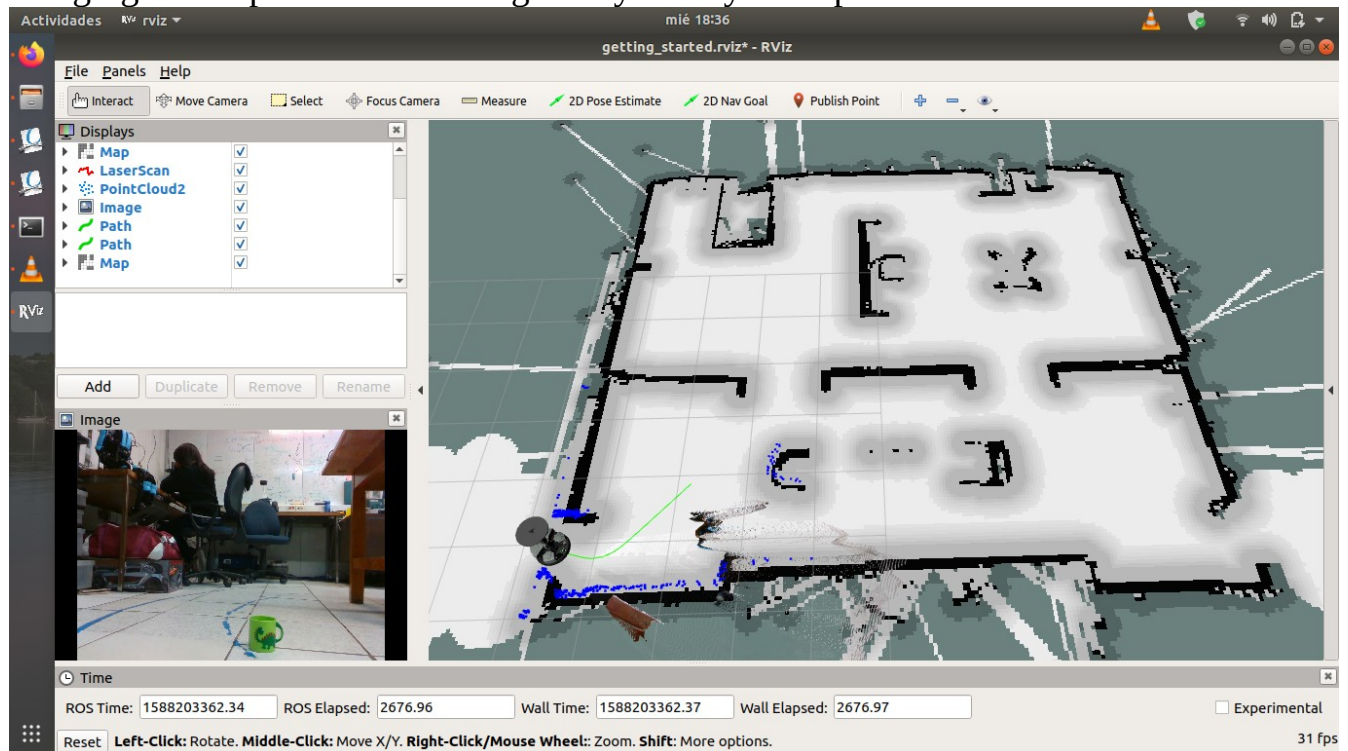
* /move_base/planner_patience: 5.0
* /move_base/shutdown_costmaps: False
* /roslistro: melodic
* /rosversion: 1.14.5

NODES
/
  move_base (move_base/move_base)

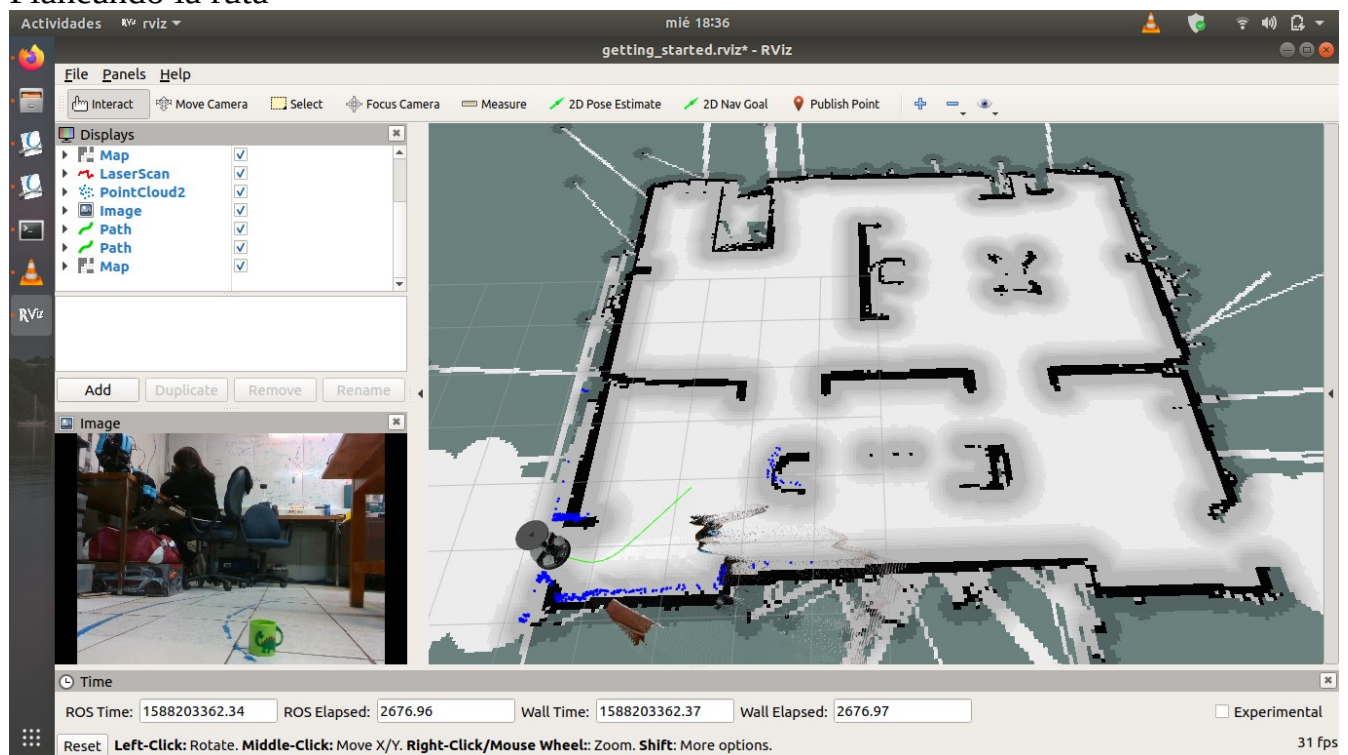
ROS_MASTER_URI=http://localhost:11311

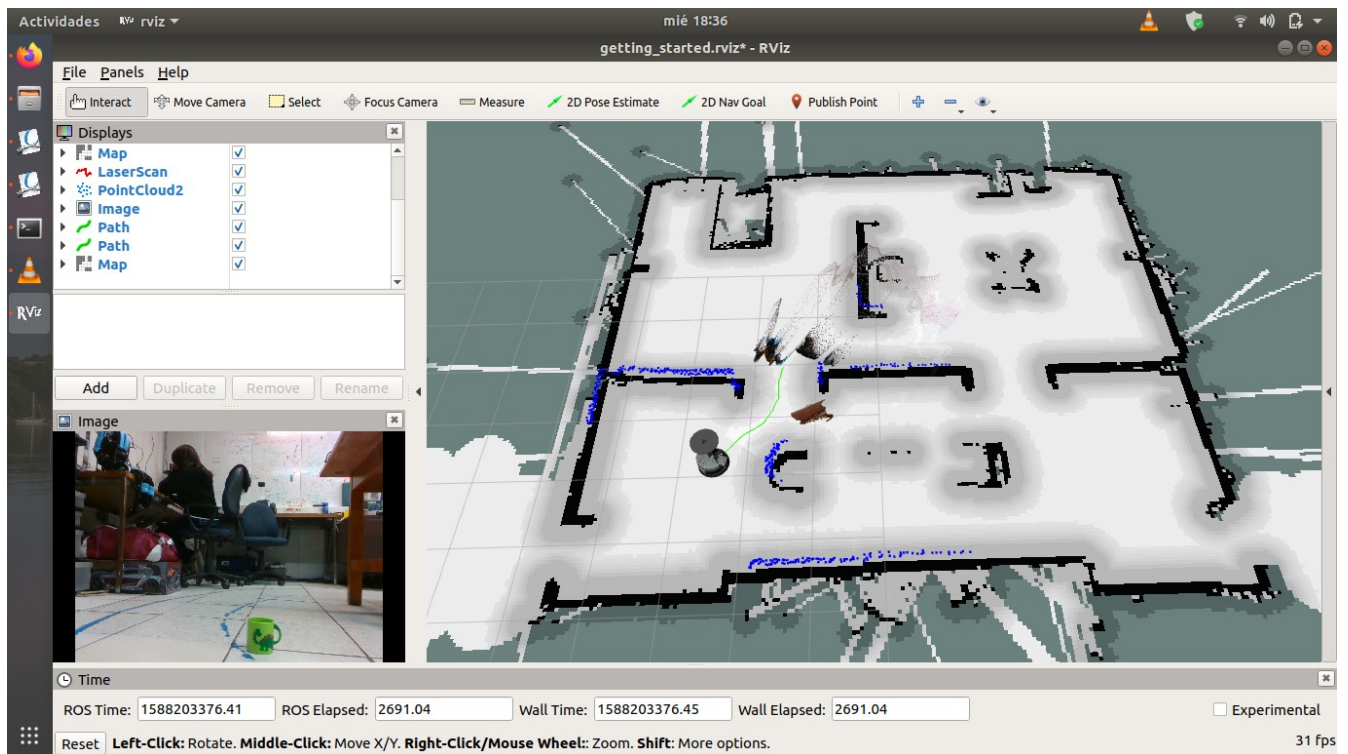
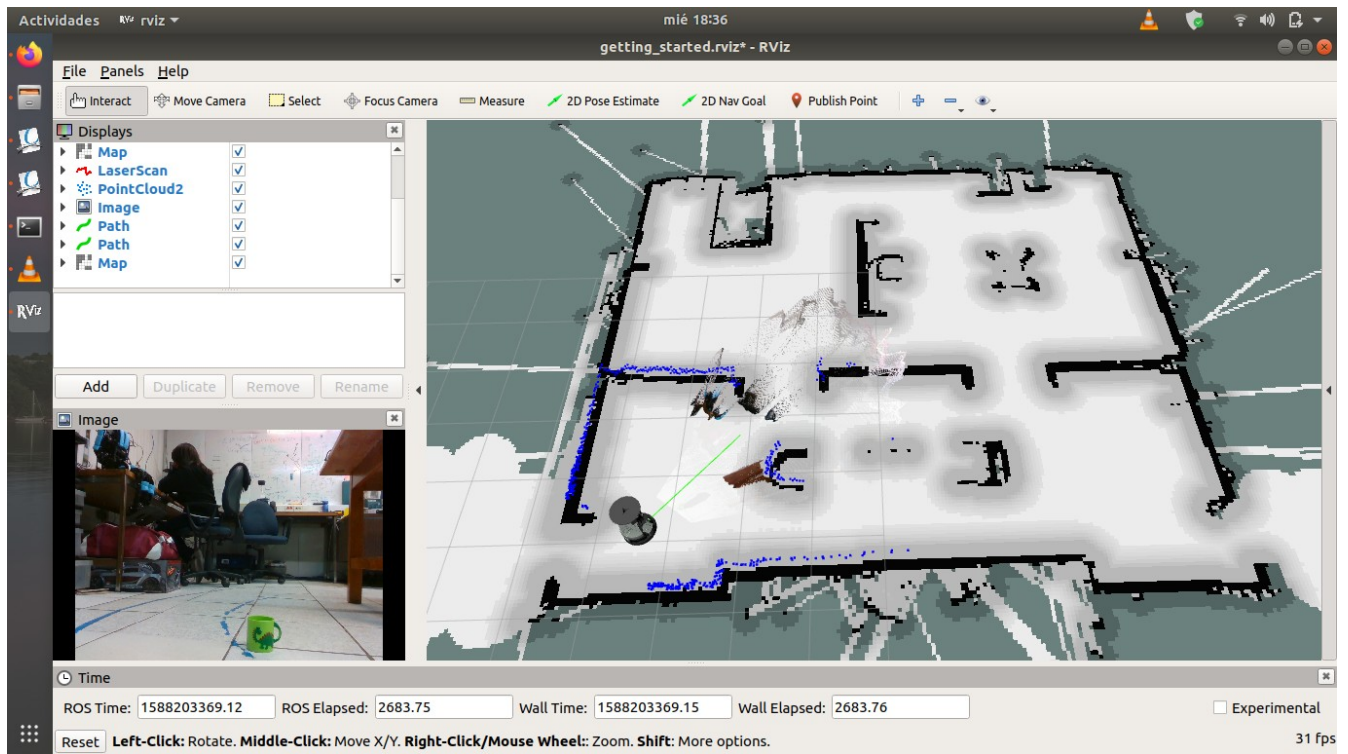
process[move_base-1]: started with pid [14215]
[ WARN] [1588203010.651508616]: global_costmap: Pre-Hydro parameter "static_map" unused since "plugins" is provided
[ WARN] [1588203010.653414151]: global_costmap: Pre-Hydro parameter "map_type" unused since "plugins" is provided
[ INFO] [1588203010.654437411]: global_costmap: Using plugin "static_layer"
[ INFO] [1588203010.752800634]: Requesting the map...
[ INFO] [1588203010.957666452]: Resizing costmap to 642 X 513 at 0.050000 m/pix
[ INFO] [1588203011.057255222]: Received a 642 X 513 map at 0.050000 m/pix
[ INFO] [1588203011.059860926]: global_costmap: Using plugin "obstacle_layer"
[ INFO] [1588203011.064863436]: Subscribed to Topics: scan bump
[ INFO] [1588203011.115028936]: global_costmap: Using plugin "inflation_layer"
[ WARN] [1588203011.178668111]: local_costmap: Pre-Hydro parameter "static_map" unused since "plugins" is provided
[ WARN] [1588203011.178976330]: local_costmap: Pre-Hydro parameter "map_type" unused since "plugins" is provided
[ INFO] [1588203011.179510087]: local_costmap: Using plugin "obstacle_layer"
[ INFO] [1588203011.182452625]: Subscribed to Topics: scan bump
[ INFO] [1588203011.227261736]: local_costmap: Using plugin "inflation_layer"
[ INFO] [1588203011.308546849]: Created local_planner dwa_local_planner/DWAPlannerROS
[ INFO] [1588203011.31052346]: Sim period is set to 0.20
[ WARN] [1588203011.314054108]: Parameter max_trans_vel is deprecated (and will not load properly). Use max_vel_trans instead.
[ WARN] [1588203011.314359255]: Parameter min_trans_vel is deprecated (and will not load properly). Use min_vel_trans instead.
[ WARN] [1588203011.314637607]: Parameter max_rot_vel is deprecated (and will not load properly). Use max_vel_theta instead.
[ WARN] [1588203011.314920567]: Parameter min_rot_vel is deprecated (and will not load properly). Use min_vel_theta instead.
[ WARN] [1588203011.315430692]: Parameter rot_stopped_vel is deprecated (and will not load properly). Use theta_stopped_vel instead.
[ INFO] [1588203012.320175279]: Recovery behavior will clear layer 'obstacles'
[ INFO] [1588203012.347024926]: Recovery behavior will clear layer 'obstacles'
```

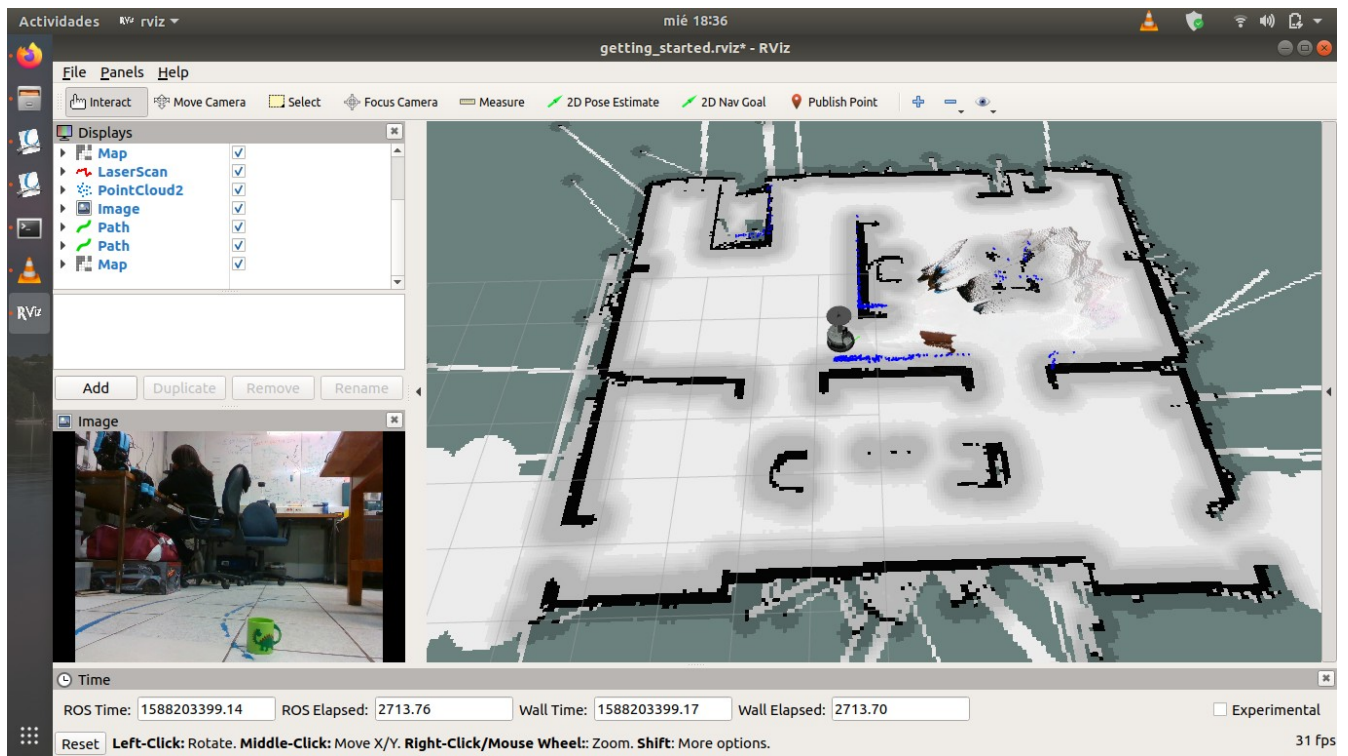
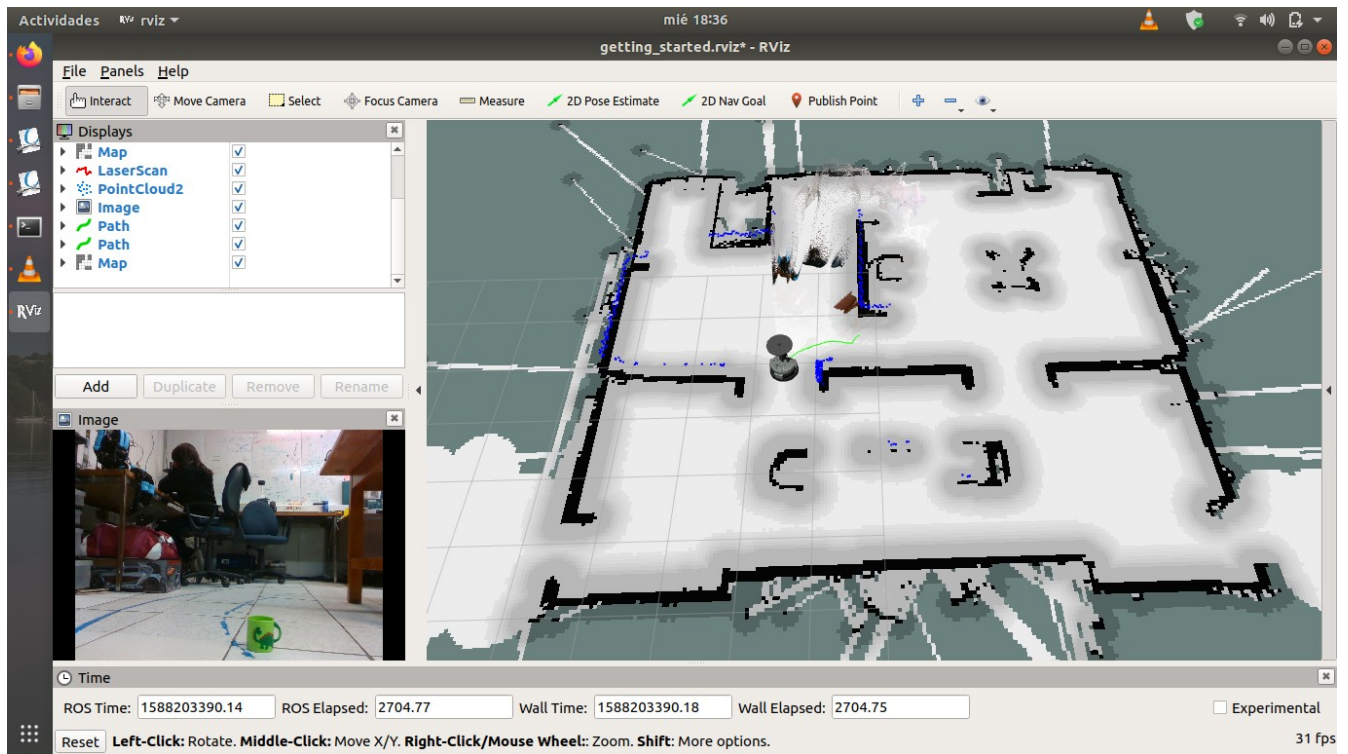
Se agregó los tópicos del camino global y local y el mapa de costo

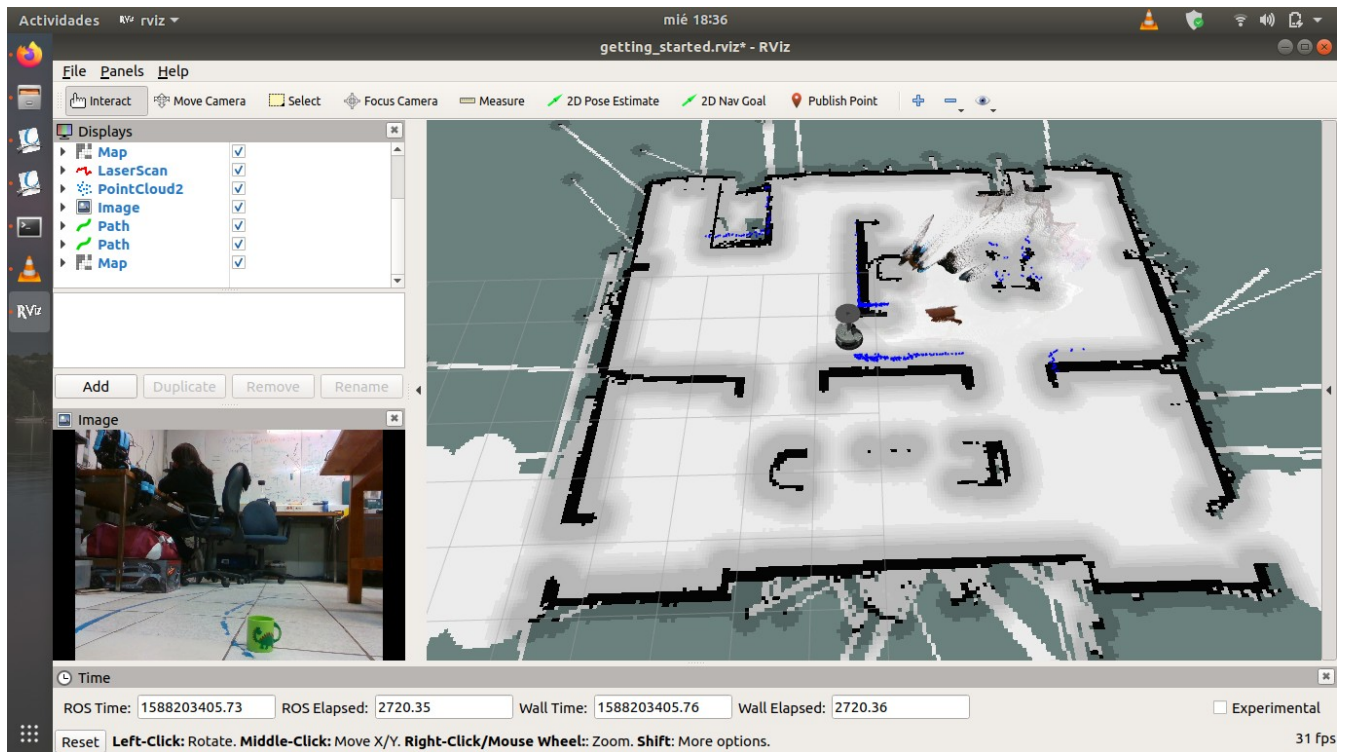


Planeando la ruta









Al modificar los parámetros del costmap en la simulación el robot hace su planeación de manera diferente y se tarda menos en llegar al punto final

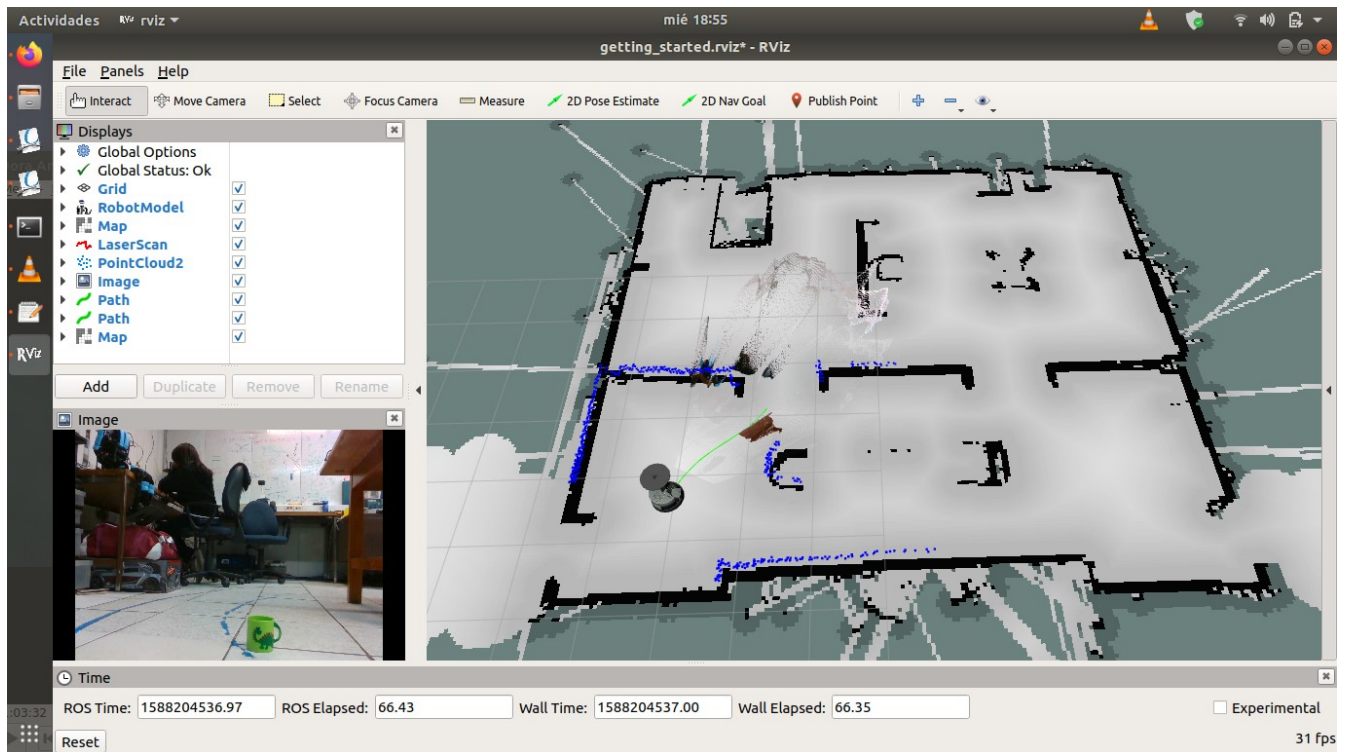
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mié 18:45
costmap_common_params.yaml
Abrir Guardar
track_unknown_space: true #true needed for disabling global path
planning_through_unknown_space
obstacle_range: 2.5
raytrace_range: 3.0
origin_z: 0.0
z_resolution: 0.2
z_voxels: 2
publish_voxel_map: false
observation_sources: scan bump
scan:
  data_type: LaserScan
  topic: scan
  marking: true
  clearing: true
  min_obstacle_height: 0.25
  max_obstacle_height: 0.35
bump:
  data_type: PointCloud2
  topic: mobile_base/sensors/bumper_pointcloud
  marking: true
  clearing: false
  min_obstacle_height: 0.0
  max_obstacle_height: 0.15
# for debugging only, let's you see the entire voxel grid

#cost_scaling_factor and inflation_radius were now moved to the
inflation_layer ns
inflation_layer:
  enabled: true
  cost_scaling_factor: 1.0 # exponential rate at which the obstacle cost
drops off (default: 10)
  inflation_radius: 2.5 # max. distance from an obstacle at which
costs are incurred for planning paths.

static_layer:
  enabled: true
Guardando el archivo «...» YAML Anchura del tabulador: 8 Ln 46, Col 26 INS

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Abrir ▾  *dwa_local_planner_params.yaml  Guardar  ⌵  ⌵  ⌵
~/RobMovil/MobileRobots-2020-2-For.../src/config_files/mov...

DWAPlannerROS:

# Robot Configuration Parameters - Kobuki
max_vel_x: 2.0#0.5 # 0.55
min_vel_x: 0.0

max_vel_y: 0.0 # diff drive robot
min_vel_y: 0.0 # diff drive robot

max_trans_vel: 2.0 #0.5 # choose slightly less than the base's capability
min_trans_vel: 0.1 # this is the min trans velocity when there is
negligible rotational velocity
trans_stopped_vel: 0.1

# Warning!
# do not set min_trans_vel to 0.0 otherwise dwa will always think
translational velocities
# are non-negligible and small in place rotational velocities will be
created.

max_rot_vel: 5.0 # choose slightly less than the base's capability
min_rot_vel: 0.4 # this is the min angular velocity when there is
negligible translational velocity
rot_stopped_vel: 0.4

acc_lim_x: 2.0 #1.0 # maximum is theoretically 2.0, but we
acc_lim_theta: 2.0
acc_lim_y: 0.0 # diff drive robot

```

Al modificar los
parámetros del planeador
local se mueve más rápido
el robot en la simulación