Práctica 3. Uso del *navigation pack* para navegación en 2D

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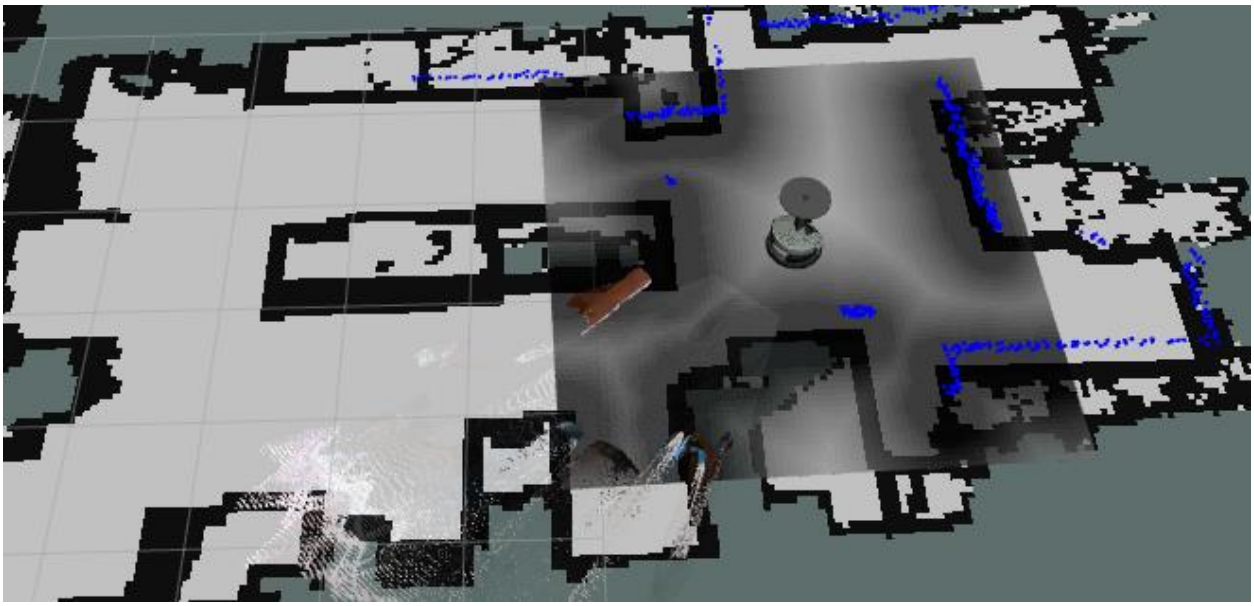
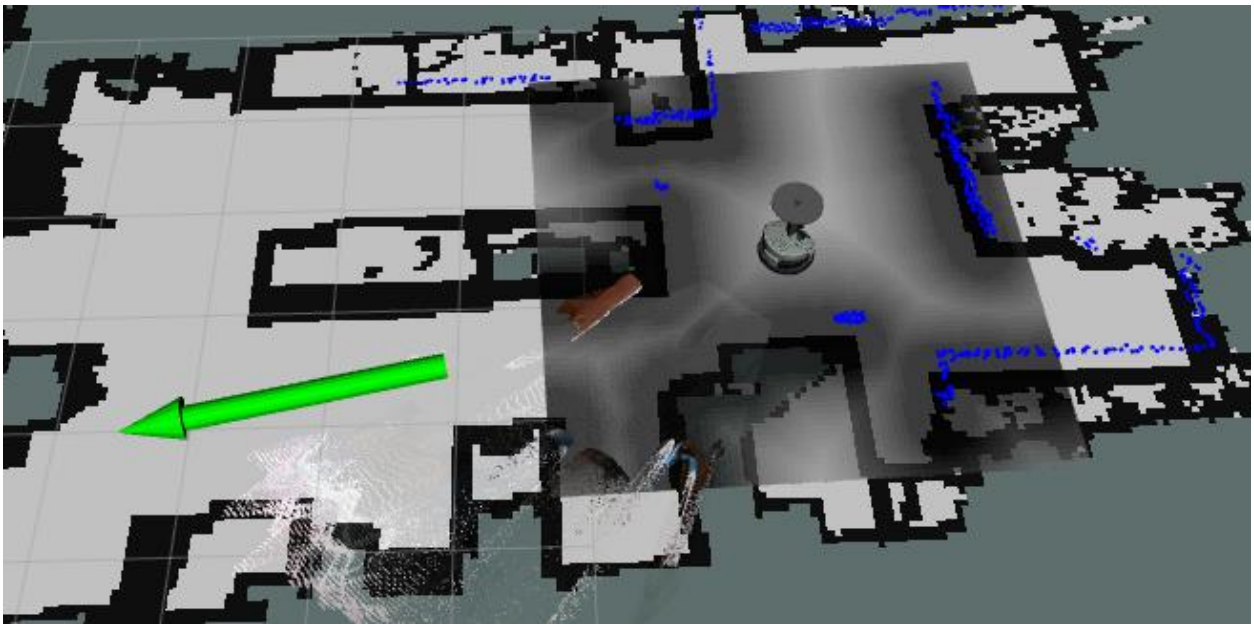
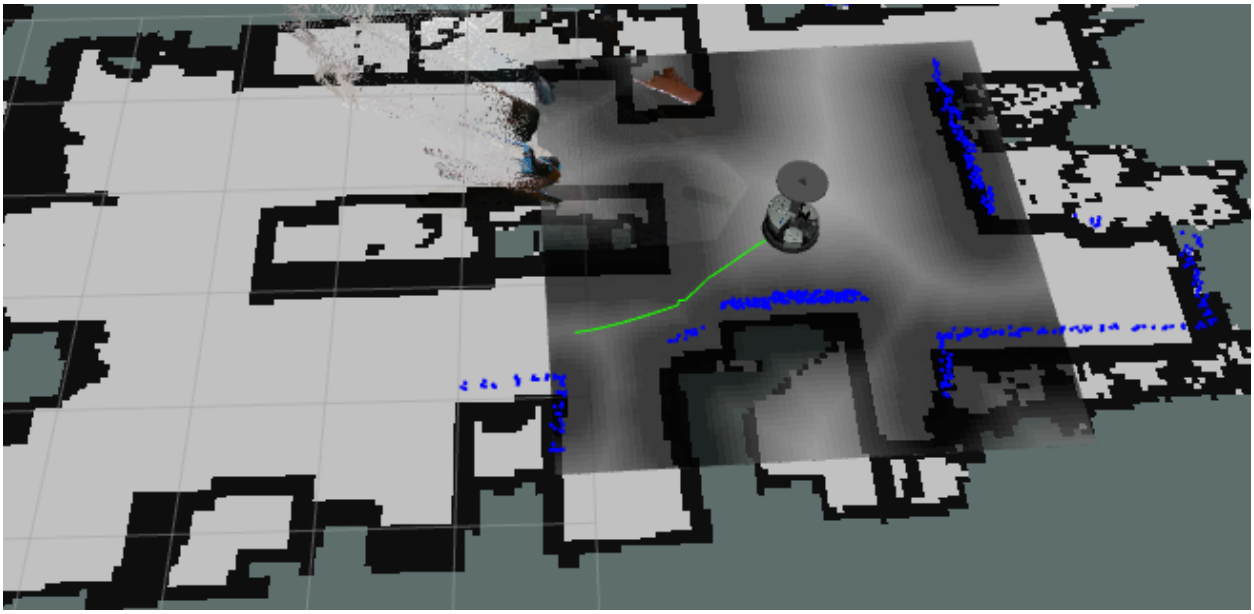
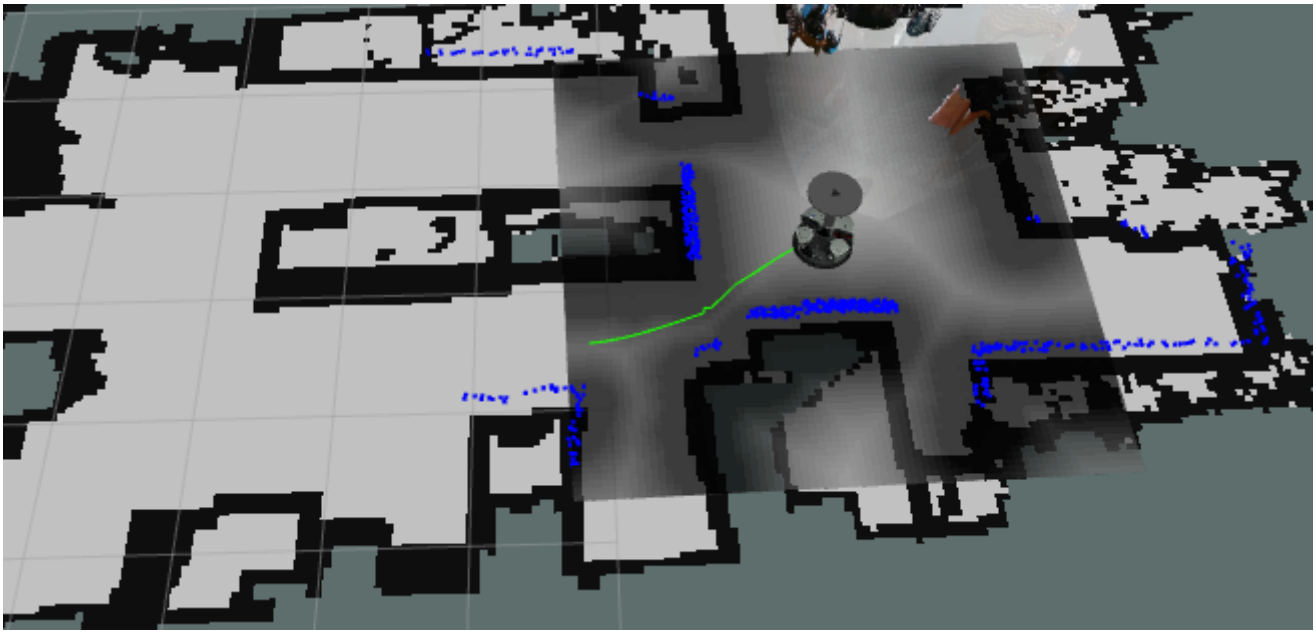
1. Desarrollo

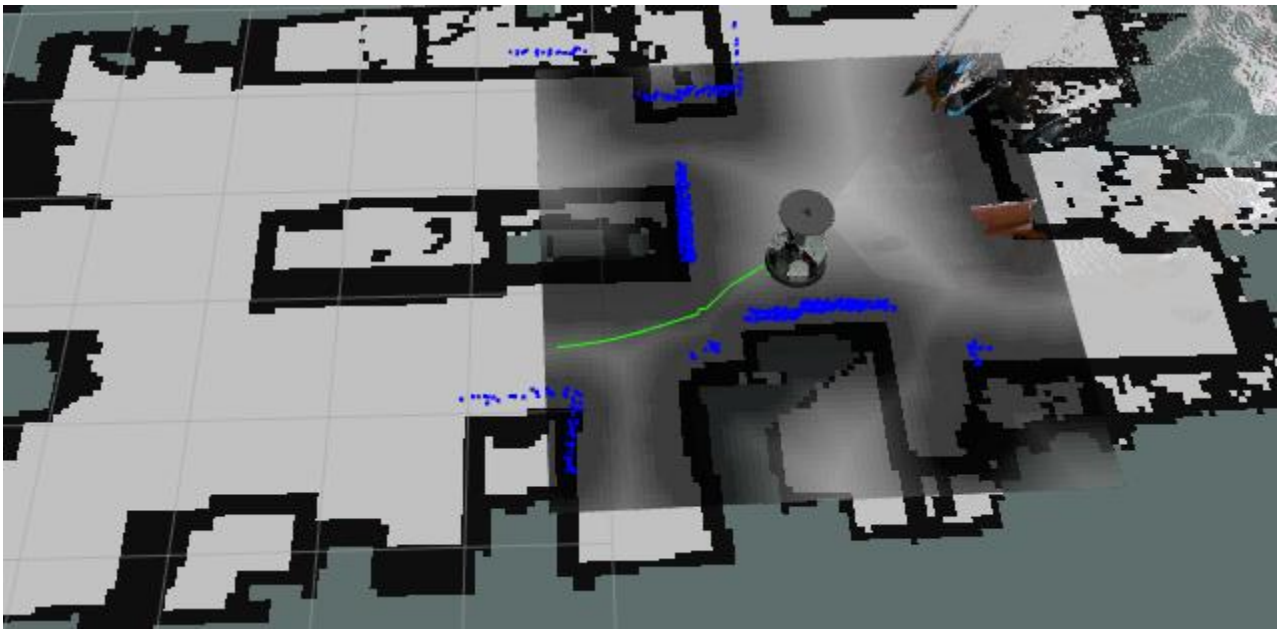
- Capturas de pantalla (varias) donde se observe la ruta planeada y el movimiento del robot.

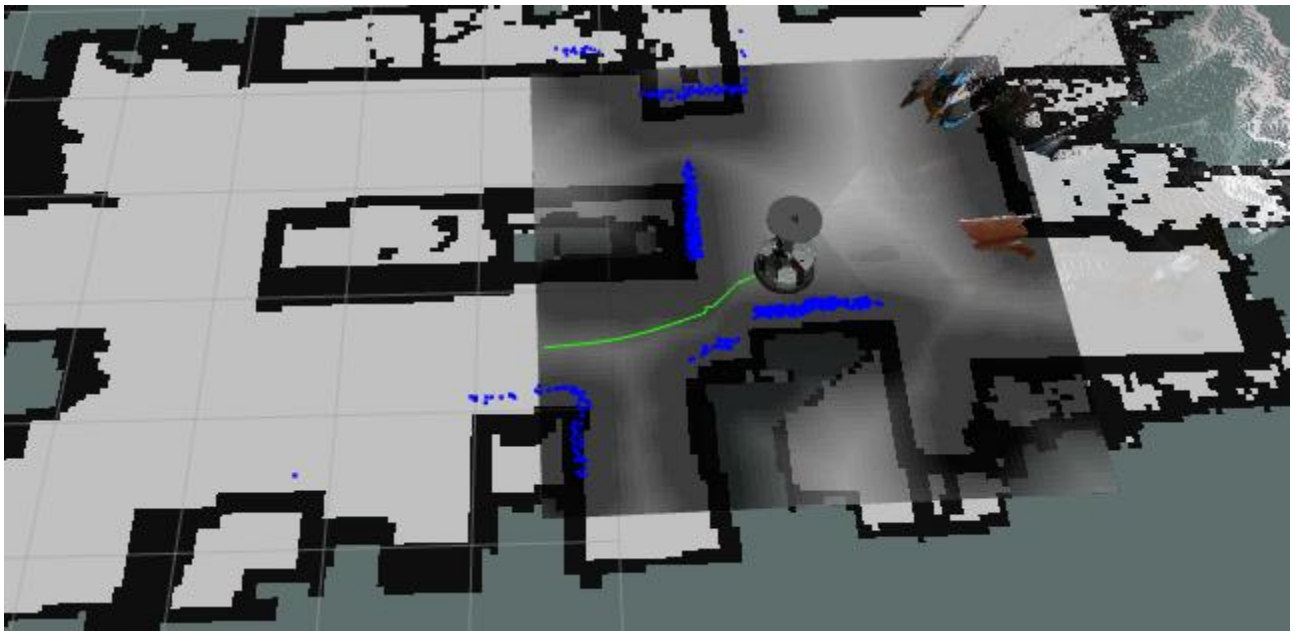


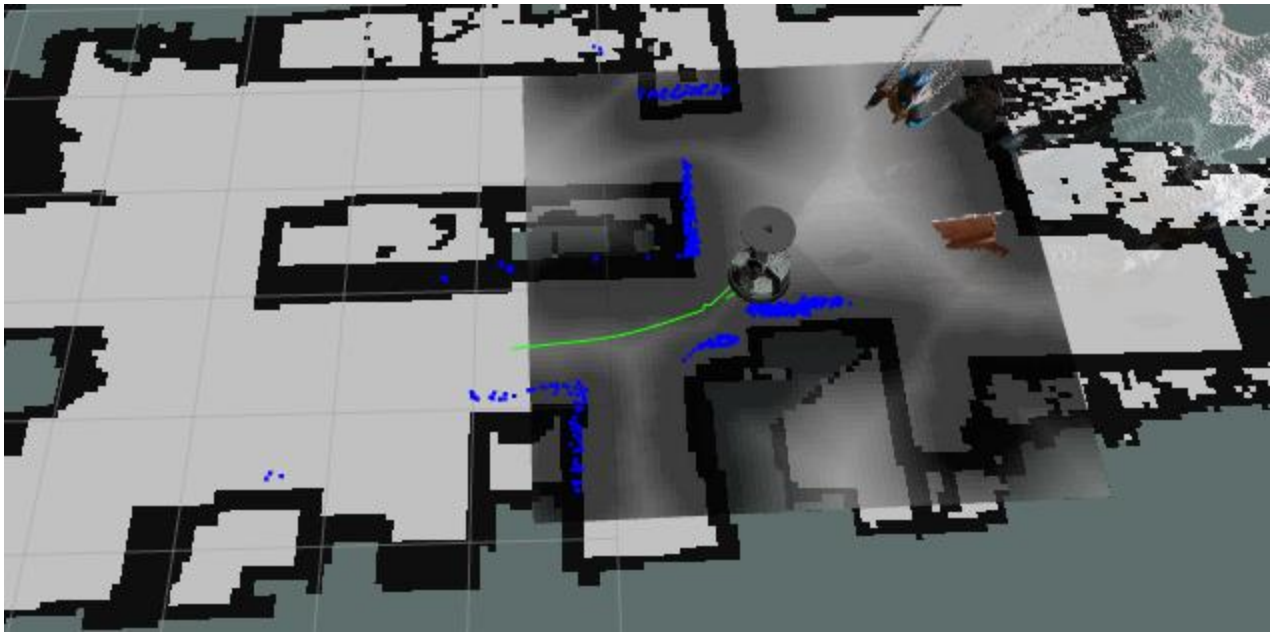


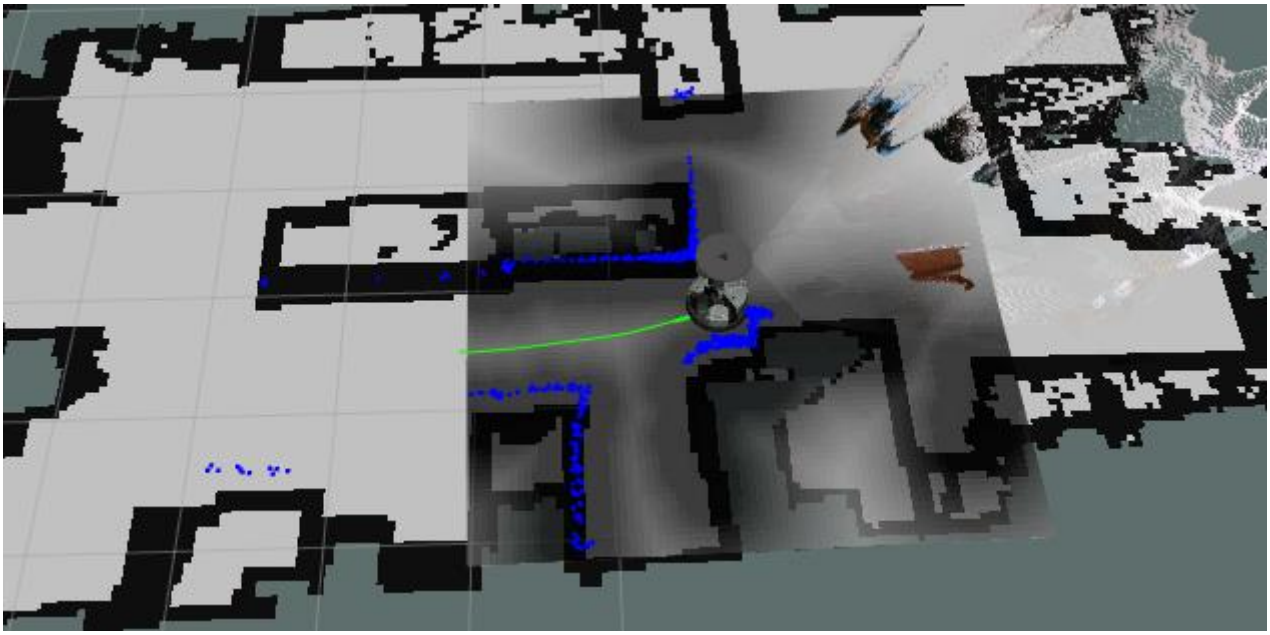


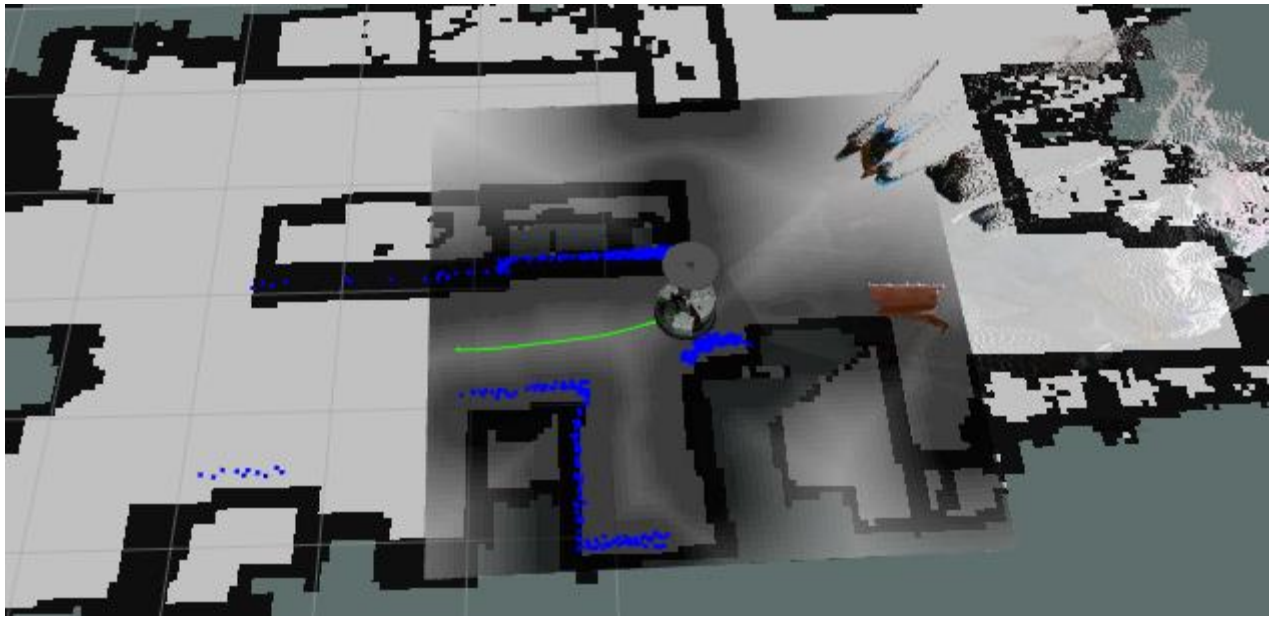


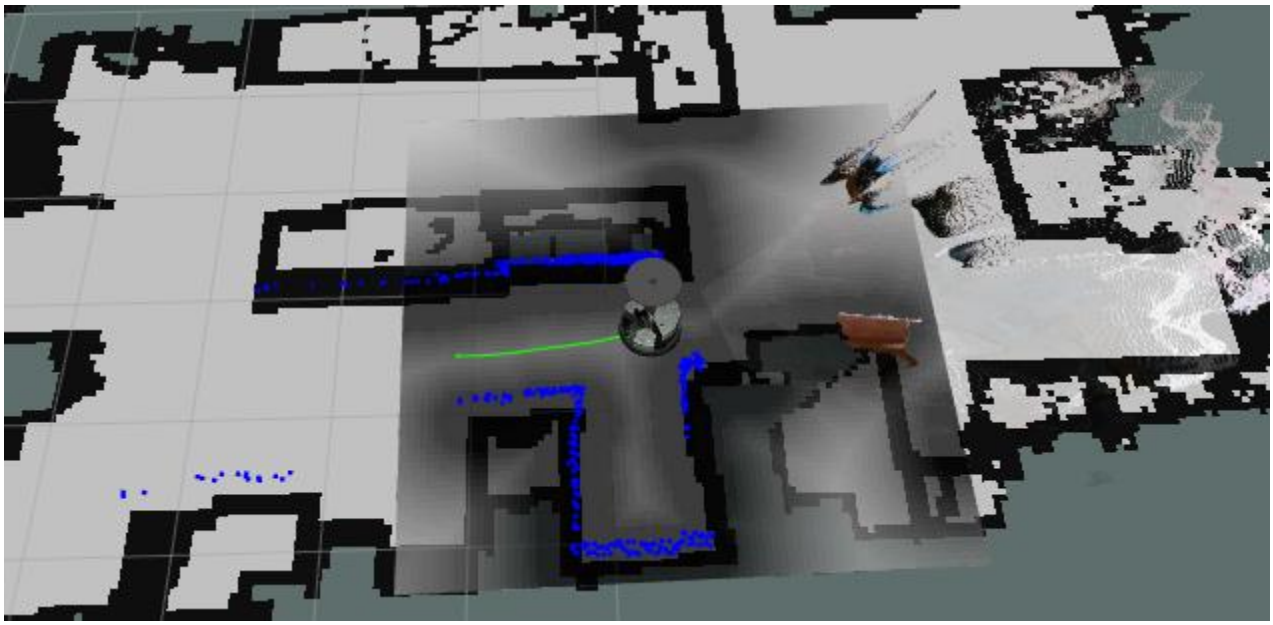












```
[ INFO] [1586972309.397084448]: Got new plan
[ INFO] [1586972310.397058900]: Got new plan
[ INFO] [1586972311.397099801]: Got new plan
[ INFO] [1586972312.397183617]: Got new plan
[ WARN] [1586972312.798936621]: DWA planner failed to produce path.
[ INFO] [1586972312.997011617]: Got new plan
```

```
[ INFO] [1586972294.636978321]: Got new plan
[ INFO] [1586972295.636969622]: Got new plan
[ INFO] [1586972296.636901960]: Got new plan
[ INFO] [1586972296.836938571]: Goal reached
```

- Comentarios sobre lo sucedido al cambiar los parámetros indicados en el ejercicio

Agregamos al display los 3 tópicos que muestran más información.
Al cambiar los parámetros de costo percibí que se modificaron los distancias en las que interactúa el robot con los obstáculos. Inclusive hubo una mayor cantidad de situaciones en las que no pudo generar una ruta porque se bloqueaba.

```
[ INFO] [1586972317.597054519]: Got new plan
[ WARN] [1586972317.598909640]: DWA planner failed to produce path.
[ WARN] [1586972317.797083325]: Rotate recovery behavior started.
[ERROR] [1586972317.797285982]: Rotate recovery can't rotate in place because there is a potential collision. Cost: -1.00
[ INFO] [1586972318.197092725]: Got new plan
[ WARN] [1586972318.199777295]: DWA planner failed to produce path.
[ERROR] [1586972318.397096848]: Aborting because a valid control could not be found. Even after executing all recovery behaviors
```

Al modificar los parámetros del planificador percibí que cambia la velocidad a la que se movía el robot, aunque me parecía un poco más impreciso.

2. Código

cost_common_params.yaml (fragmento)

```
#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.
```

dwa_local_planner_params.yaml (fragmento)

```
# Robot Configuration Parameters - Kobuki

  max_vel_x: 2.0  # 0.55
  max_trans_vel: 2.0 # choose slightly less than the base's capability
  acc_lim_x: 2.0 # maximum is theoretically 2.0, but we
```

El código completo se encuentra en el repositorio