

6、Lidar mapping

Note: This course takes Rosmaster-X3 as an example. Users need to modify according to their own motion model, which is different from the content of handheld laser radar mapping. This mapping adds odom data, so users need to have odom data in their own motion model.

Function package path: ~/oradar_ws/src/yahboomcar_nav

This course mainly introduces several commonly used mapping algorithms: gmapping, hector, karto, cartographer.

6.1、Start mapping

Input following command in terminal.

```
roslaunch yahboomcar_nav laser_bringup.launch  
roslaunch yahboomcar_nav yahboomcar_map.launch map_type:=gmapping
```

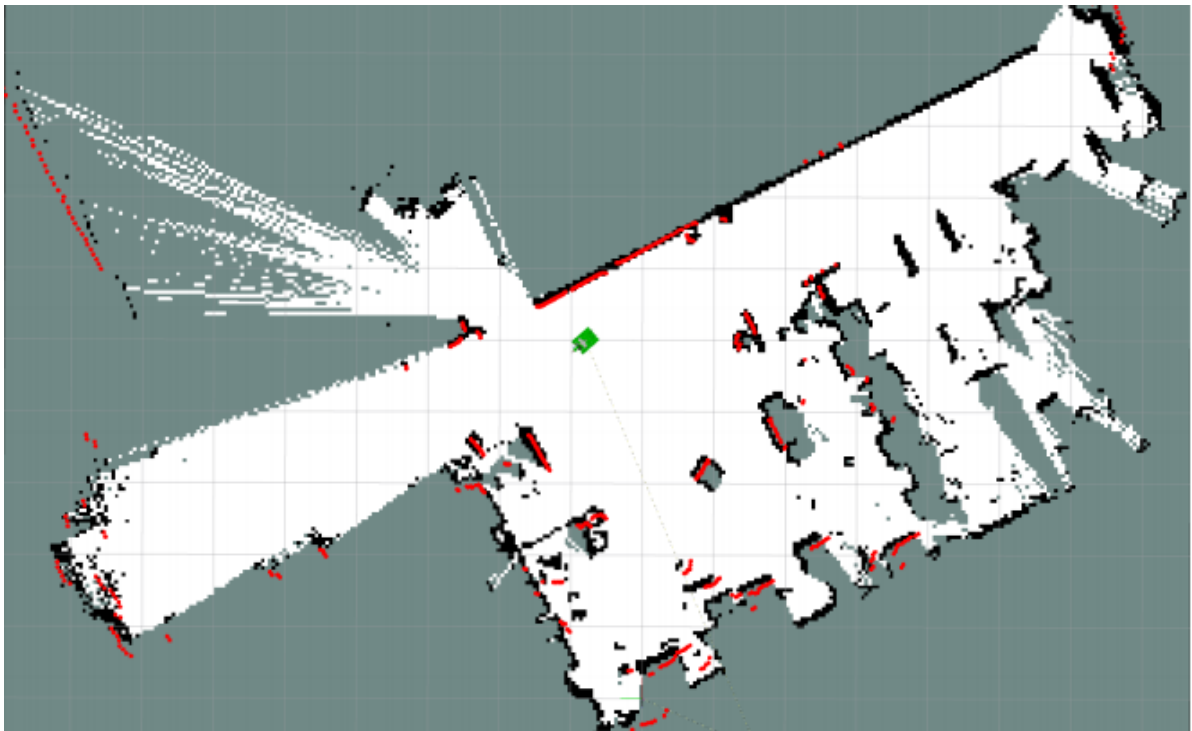
Note: The rotation speed is slower the speed is, the effect will better.

- Parameter map_Type: mapping algorithm, you can select gmapping, hector, karto, cartographer, and the default is gmapping

Keyboard control robot movement

```
roslaunch yahboomcar_ctrl yahboom_keyboard.launch
```

We need to make sure that the robot walks around the area to be mapped and the map is closed as much as possible



6.2、 Save map

Several mapping algorithms save maps in different ways,

- cartographer: Input following command.

```
bash ~/oradar_ws/src/yahboomcar_nav/maps/carto_map.sh
```

- gampping、 hector、 karto: Input following command.

```
bash ~/yahboomcar_ws/src/yahboomcar_nav/maps/map.sh
```

The map will be saved to this path. ~/yahboomcar_ws/src/yahboomcar_nav/maps/

One pgm picture, one yaml file.