Using LMs1xx laser and Gmapping notes

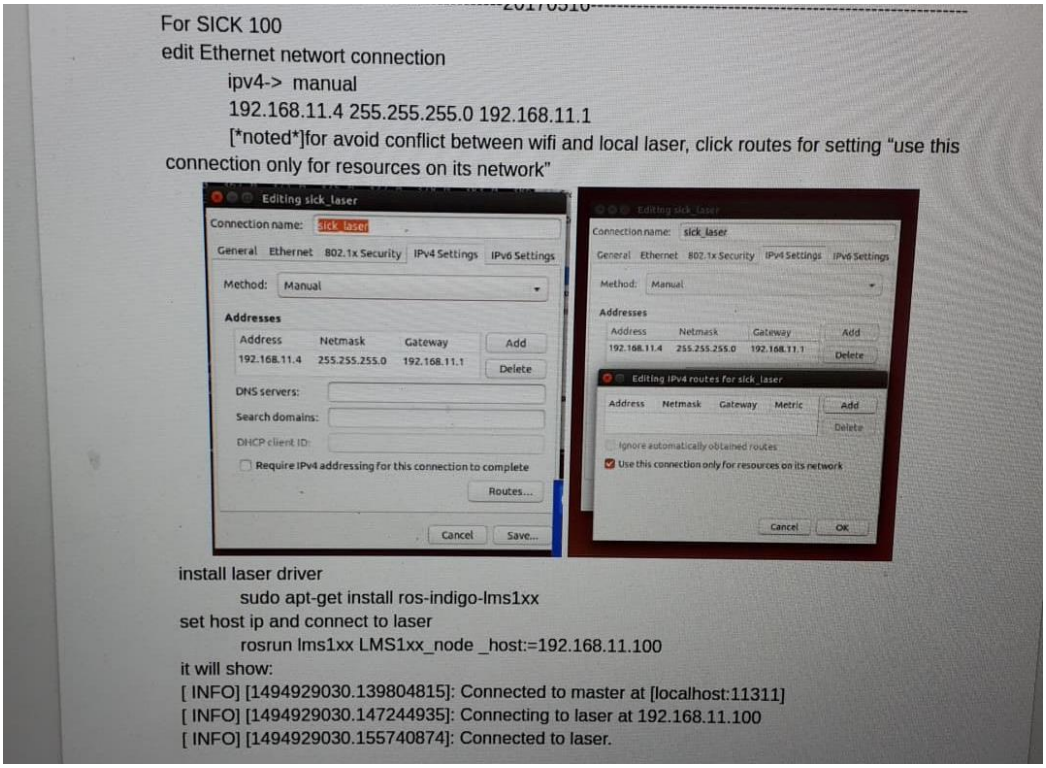
- Installation

```
$ sudo apt-get install ros-kinetic-gmapping
$ sudo apt-get install ros-kinetic-slam-gmapping
$ sudo apt-get install ros-kinetic-map-server
$ sudo apt-get install ros-kinetic-navigation
```

Ros Aria

```
$ git clone https://github.com/amor-ros-pkg/rosaria.git
$ sudo apt-get install libaria*
$ sudo apt-get install ros-kinetic-teleop-twist-keyboard
```

LMs1xx



Enter .bashrc

```
# for ROS-kinetic
source /opt/ros/kinetic/setup.bash
source ~/catkin_ws/devel/setup.bash
```

For indigo, just change kinetic to indigo

Build up new package in your work space, naming gmapping_ros, adding geometry_msgs、roscpp、rospy、std_msg

```
$ catkin_create_pkg gmapping_ros geometry_msgs roscpp rospy std_
msgs
```

mkdir launch and add slam_gmapping.launch

```
<?xml version="1.0"?>
<launch>
    <node pkg="gmapping" type="slam_gmapping" name="gmapping" >
        <param name="odom_frame" value="odom" />
        <param name="base_frame" value="base_footprint" />
        <param name="laser" value="base_scan"/>
    </node>
    <node pkg="tf"
          type="static_transform_publisher"
          name="link1_broadcaster"
          args="0 0 0 0 0 0 1 base_footprint base_scan 100" />
</launch>
```

- Implementation

  Get connection with pioneer by usb port:

```
$ sudo chmod 777 /dev/ttyUSB0
$ roscore
$ rosrun rosaria RosAria
$ rostopic list # find topic with 'cmd_vel'
$ rosrun teleop_twist_keyboard teleop_twist_keyboard.py /cmd_vel:=/R
   osAria/cmd_vel # map /cmd_vel to the topic you find

Run gmapping node
$ roslaunch gmapping_ros slam_gmapping.launch
$ rviz
Add->by topic->map
```

Using map_server to save the map

```
$ rosrun map_server map_saver -f YOUR_PATH/MAP_NAME
```