

Robótica Móvil

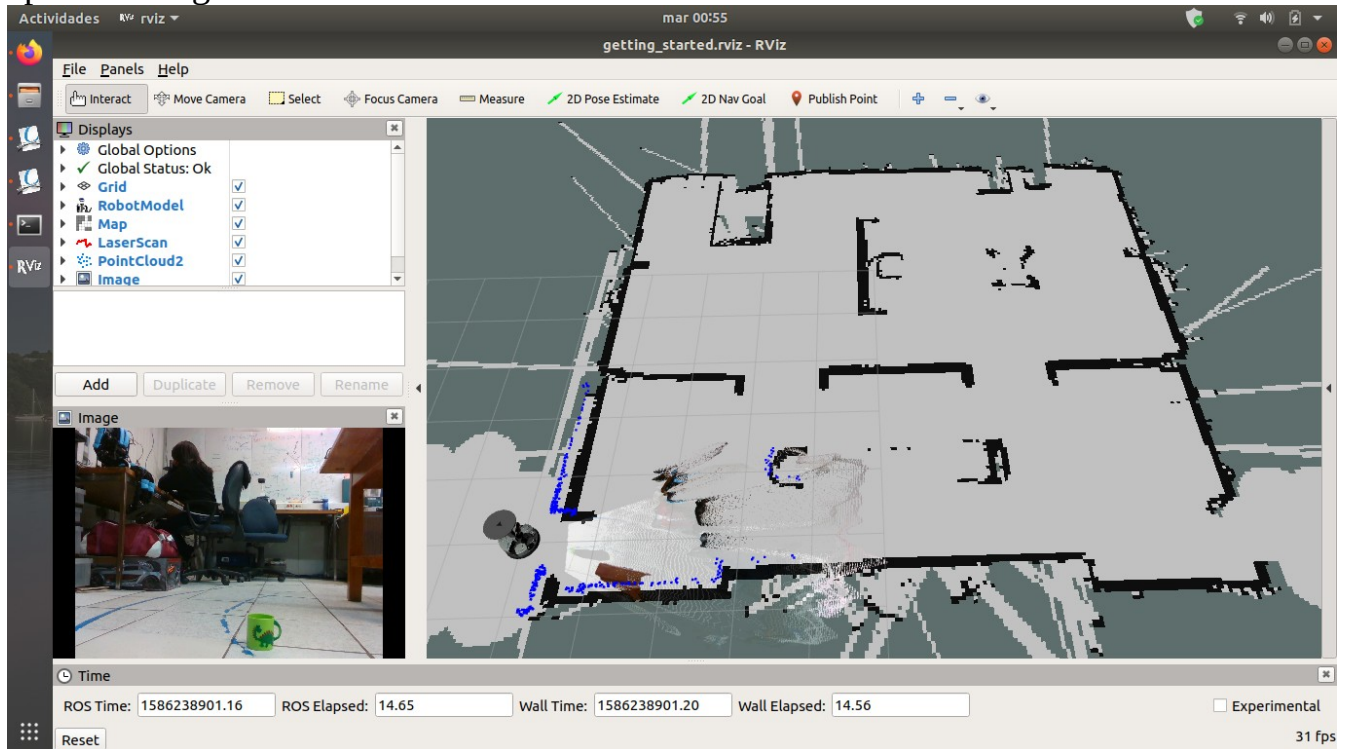
Práctica 2: Antecedentes

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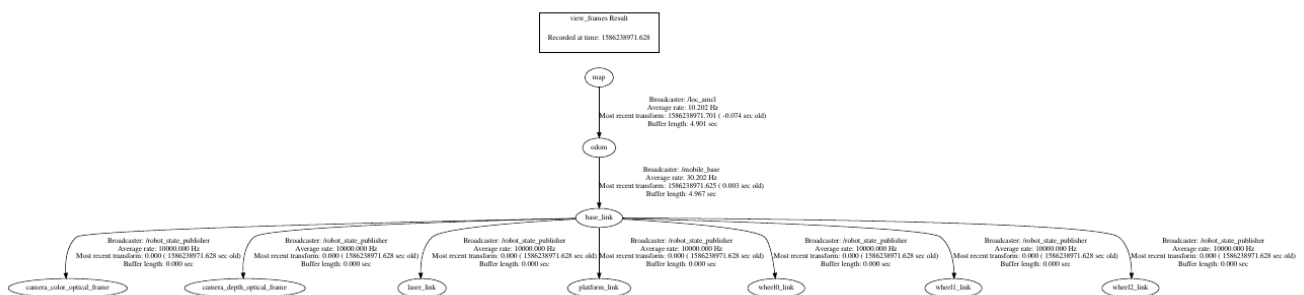
Al ejecutar el comando :

\$ roslaunch bring_up robotino_simul.launch

aparece el siguiente rviz



Transformaciones y nodos que se publican



Cambiando la descripción del robot en el archivo robotino_simul.launch por “justina_simple.urdf” y el mapa por “Biorobotica.yaml”

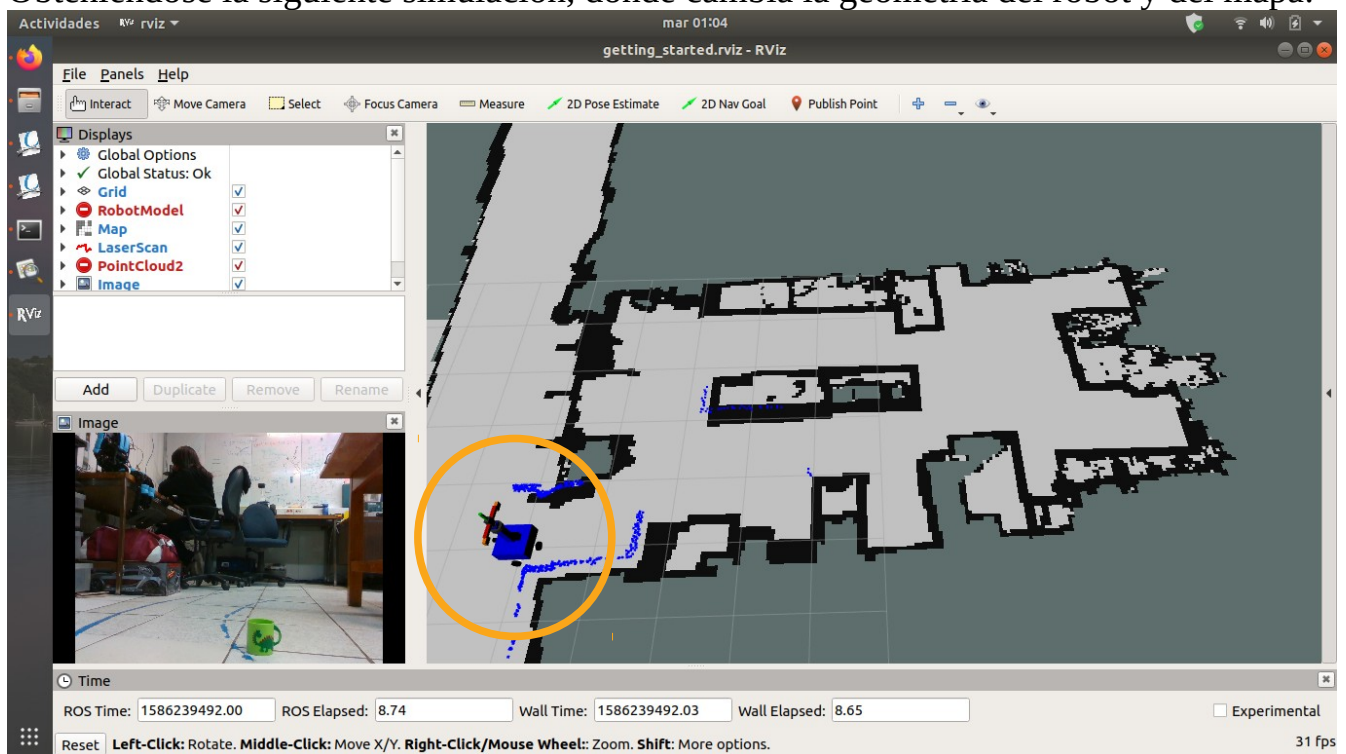
```
robotino_simul.launch
~/RobMovil/MobileRobots-2020-2-For-Covid19/catkin_ws/src/bring_up/launch

<launch>
  <param name="robot_description" textfile="$(find robot_description)/justina_simple.urdf"/>
  <node pkg="robot_state_publisher" type="robot_state_publisher" name="robot_state_publisher"/>

  <node name="rviz" pkg="rviz" type="rviz" args="-d $(find config_files)/rviz/
getting_started.rviz"/>
  <node name="laser_simulator" pkg="laser_simulator" type="laser_simulator" output="screen">
    <param name="noise" value="0.05"/>
  </node>
  <node name="mobile_base" pkg="mobile_base_simulator" type="mobile_base_simulator.py"
output="screen"/>
  <node name="rgbd_simul" pkg="rgbd_simul" type="rgbd_simul2.py" output="screen">
    <param name="bag_file" value="$(find vision)/bags/test.bag"/>
  </node>

  <node name="map_server" pkg="map_server" type="map_server" output="screen"
args="$(find config_files)/occupancy_grids/Biorobotica.yaml"/>
  <node name="loc_amcl" pkg="amcl" type="amcl" output="screen" args="scan:=/scan">
    <param name="odom_alpha1" value="0.6"/>
    <param name="odom_alpha2" value="0.6"/>
    <param name="odom_alpha3" value="0.6"/>
    <param name="odom_alpha4" value="0.6"/>
  </node>
```

Obteniéndose la siguiente simulación, donde cambia la geometría del robot y del mapa:



Se volvió a cambiar la descripción del robot a robotino para el siguiente paso. Modificando el punto de origen de la cámara en el archivo “robotino.urdf” por las coordenadas 5 2 1 en las líneas 114 y 121

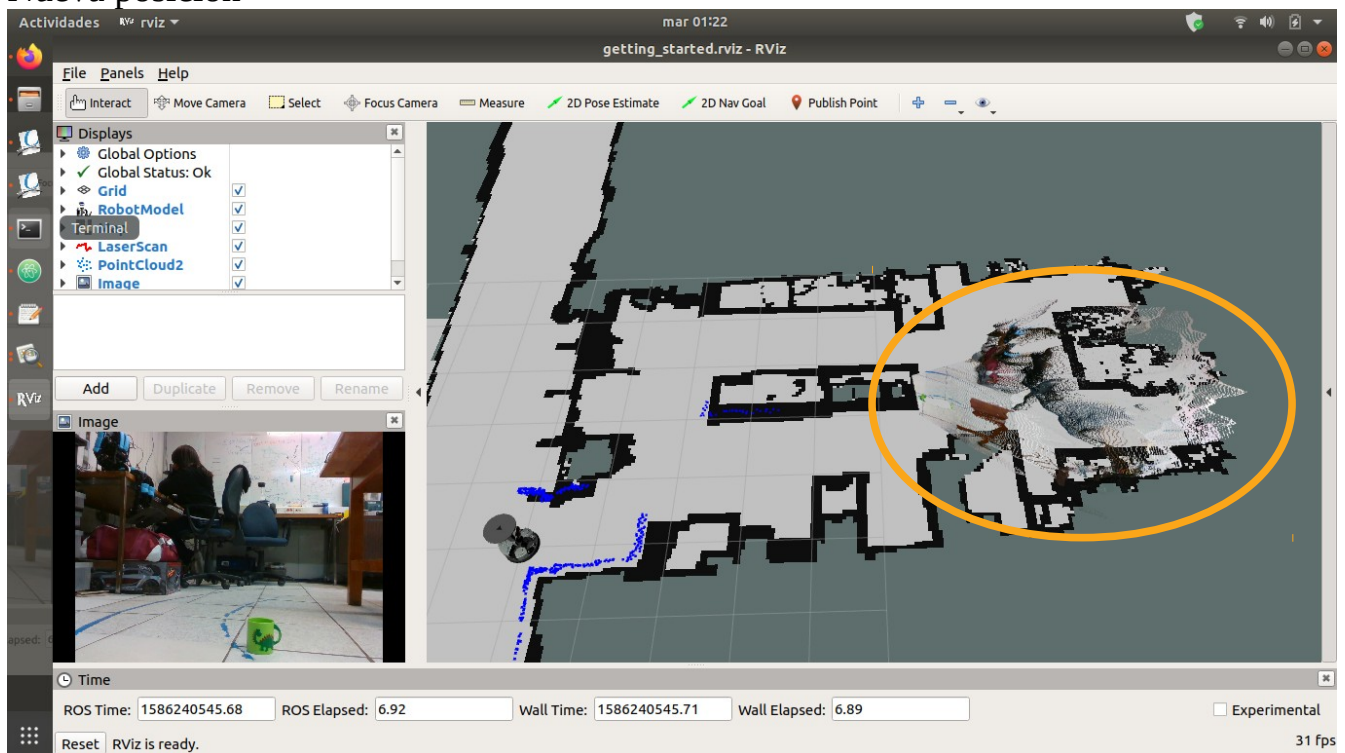
```

110 <link name="camera_color_optical_frame"/>
111 <joint name="depth_camera_joint" type="fixed">
112   <parent link="base_link"/>
113   <child link="camera_color_optical_frame"/>
114   <origin xyz="5 2 1" rpy="-1.8708 0 -1.5708"/>
115 </joint>
116
117 <link name="camera_depth_optical_frame"/>
118 <joint name="depth_camera_joint2" type="fixed">
119   <parent link="base_link"/>
120   <child link="camera_depth_optical_frame"/>
121   <origin xyz="5 2 1" rpy="-1.8708 0 -1.5708"/>
122 </joint>
123 </robot>
124

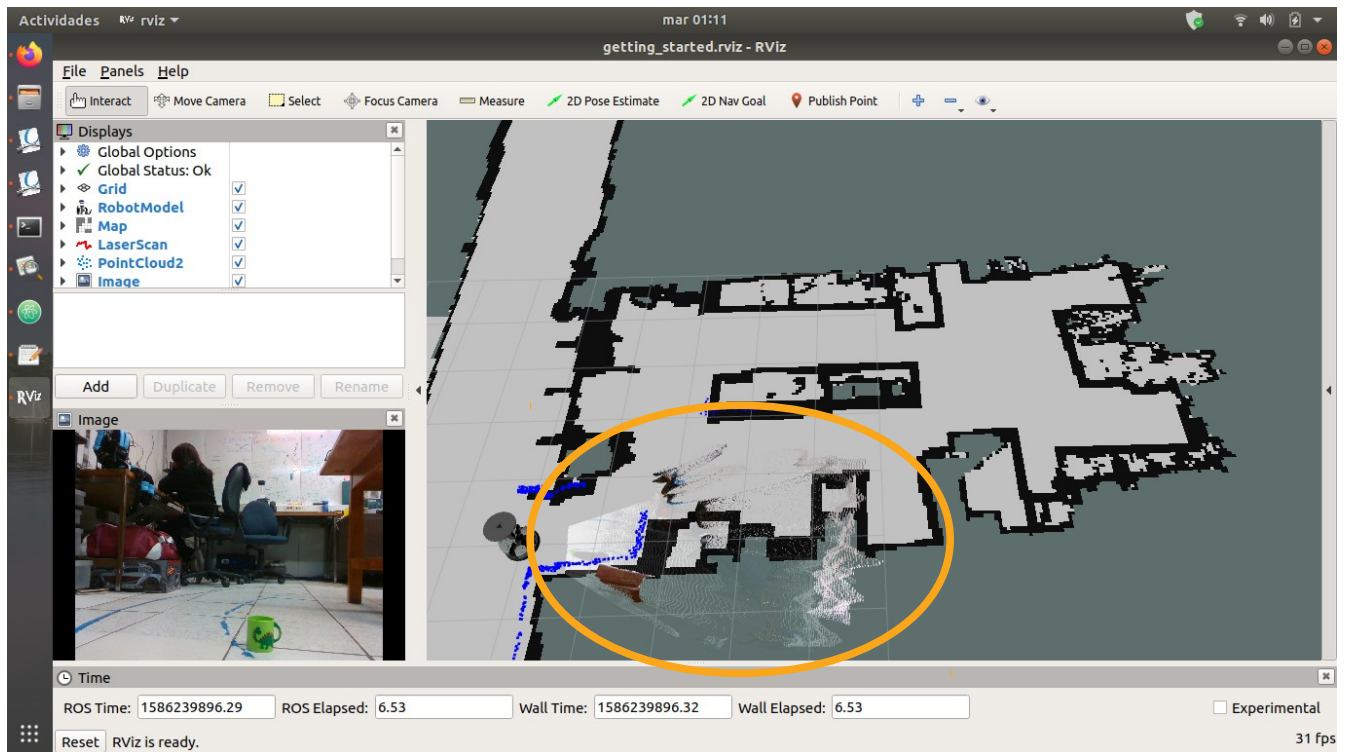
```

Se obtiene la siguiente simulación, donde el robot sigue en la misma posición pero el lugar dónde está la cámara cambió con respecto a la posición inicial

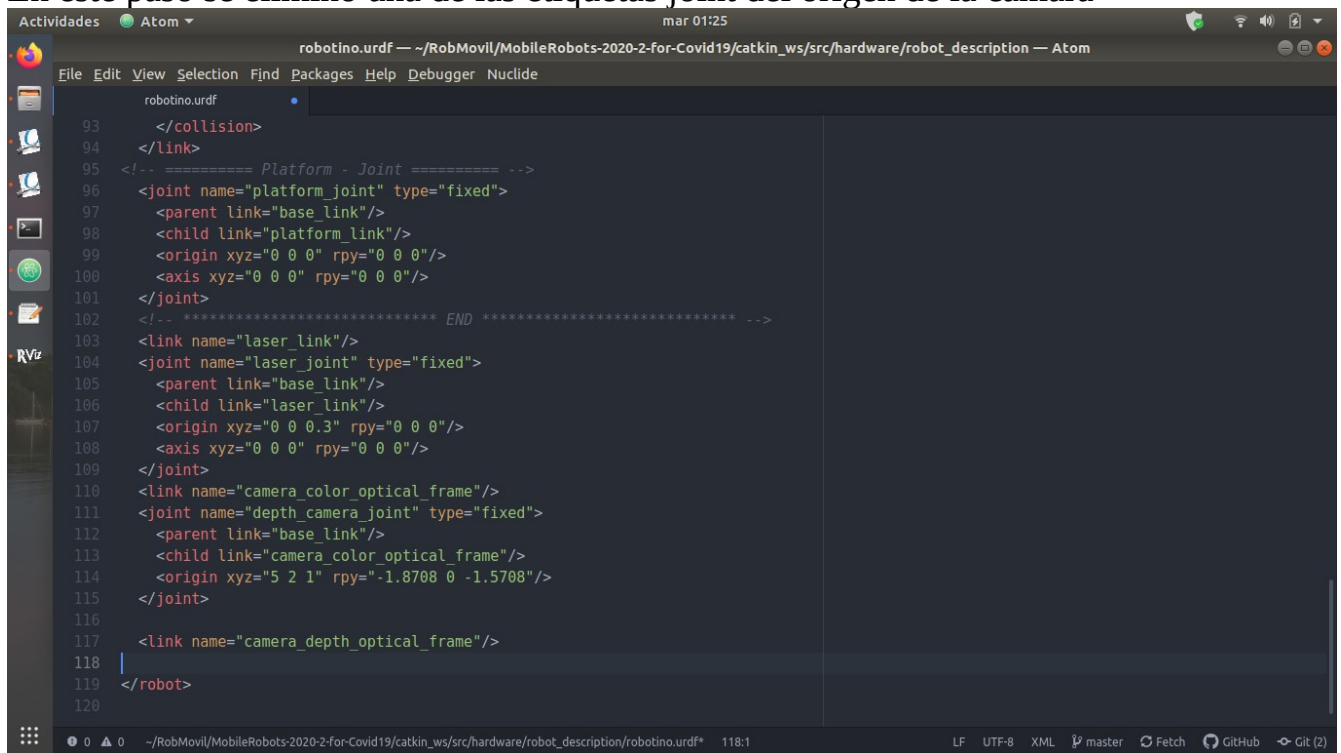
Nueva posición



Posición anterior



En este paso se eliminó una de las etiquetas joint del origen de la cámara



Marcando lo siguiente en la terminal

```
Actividades Terminal mar 01:21
/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/bring_up/launch/robotino_simul.launch http://localhost:11311
Archivo Editar Ver Buscar Terminal Pestañas Ayuda
/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/bring_up/la... x Terminal
ROS_MASTER_URI=http://localhost:11311

setting /run_id to ee35ca92-7897-11ea-acca-843a4b0665d0
process[rosout-1]: started with pid [23729]
started core service [/rosout]
process[robot_state_publisher-2]: started with pid [23736]
process[rviz-3]: started with pid [23737]
[ERROR] [1586240452.968749637]: Failed to find root link: Two root links found: [base_link] and [camera_depth_optical_frame]
process[laser_simulator-4]: started with pid [23743]
process[mobile_base-5]: started with pid [23744]
process[rgbd_simul-6]: started with pid [23745]
process[map_server-7]: started with pid [23746]
process[roscpp-8]: started with pid [23747]
[ INFO] [1586240453.058357559]: Loading map from image "/home/atollin/RobMovil/MobileRobots-2020-2-for-Covid19/catkin_ws/src/config_files/occupan
cy_grids/Biorobotica.pgm"
INITIALIZING LASER SIMULATOR...
[ INFO] [1586240453.110107517]: waitForService: Service [/static_map] has not been advertised, waiting...
[ INFO] [1586240453.153032027]: Requesting the map...
[ WARN] [1586240453.154479600]: Request for map failed; trying again...
[ INFO] [1586240453.176050504]: Read a 2048 X 2048 map @ 0.050 m/cell
[ INFO] [1586240453.194531145]: waitForService: Service [/static_map] is now available.
[ INFO] [1586240453.201331427]: Sending map
[robot_state_publisher-2] process has died [pid 23736, exit code 1, cmd /opt/ros/melodic/lib/robot_state_publisher/robot_state_publisher __name:=
robot_state_publisher __log:=/home/atollin/.ros/log/ee35ca92-7897-11ea-acca-843a4b0665d0/robot_state_publisher-2.log].
log file: /home/atollin/.ros/log/ee35ca92-7897-11ea-acca-843a4b0665d0/robot_state_publisher-2*.log
INITIALIZING RGBD SIMUL NODE...
[ INFO] [1586240453.658497749]: Sending map
[ INFO] [1586240453.668495847]: Received a 2048 X 2048 map @ 0.050 m/plx

[ERROR] [1586240453.721980232]: Failed to find root link: Two root links found: [base_link] and [camera_depth_optical_frame]
[ INFO] [1586240453.815969074]: Initializing likelihood field model; this can take some time on large maps...
INITIALIZING MOBILE BASE ...
[ INFO] [1586240453.953458319]: Done initializing likelihood field model.
[ WARN] [1586240469.037145415]: No laser scan received (and thus no pose updates have been published) for 1586240469.037070 seconds. Verify that
data is being published on the /scan topic.
```

Lo que nos indica es que no pudo obtener información del escáner y no se puede publicar la posición del robot, dejando la simulación de la siguiente manera:

