Robot Operating System – modelowanie robotów (URDF)

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Uruchomienie ROSa

- ROS Master:

```
$ roscore
```

Sterowanie kołami

```
$ roslaunch urdf_sim_tutorial 13-diffdrive.launch
```

Model kamery

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<!- - camera - ->
<gazebo reference="box">
<sensor type="camera" name="camera1">
<update_rate>30.0</update_rate>
<camera name="head">
<horizontal_fov>1.3962634</horizontal_fov>
<image>
<width>640</width>
<height>480</height>
<format>R8G8B8</format>
</image>
```

Model kamery

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<clip>
<near>0.02</near>
<far>300</far>
</clip>
<noise>
<type>gaussian</type>
<mean>0.0</mean>
<stddev>0.007</stddev>
</noise>
</camera>
```

Model kamery

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<plugin name="camera_controller" filename="libgazebo_ros_camera.so">
<alwaysOn>true</alwaysOn>
<updateRate>0.0</updateRate>
<cameraName>rrbot/camera1</cameraName>
<imageTopicName>image_raw</imageTopicName>
<cameraInfoTopicName>camera_info</cameraInfoTopicName>
<frameName>camera_link</frameName>
<hackBaseline>0.07</hackBaseline>
<distortionK1>0.0</distortionK1>
<distortionK2>0.0</distortionK2>
<distortionK3>0.0</distortionK3>
```

Model kamery

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<distortionT1>0.0</distortionT1>
<distortionT2>0.0</distortionT2>
</plugin>
</sensor>
</gazebo>
```

Skaner laserowy

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<!- - hokuyo - ->
<gazebo reference="box">
<sensor type="ray" name="head_hokuyo_sensor">
<pose>0 0 0 0 0 0</pose>
<visualize>false</visualize>
<update_rate>40</update_rate>
<ray>
```

Skaner laserowy

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<scan>
<horizontal>
<samples>720</samples>
<resolution>1</resolution>
<min_angle>-1.570796</min_angle>
<max_angle>1.570796</max_angle>
</horizontal>
</scan>
```

Skaner laserowy

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

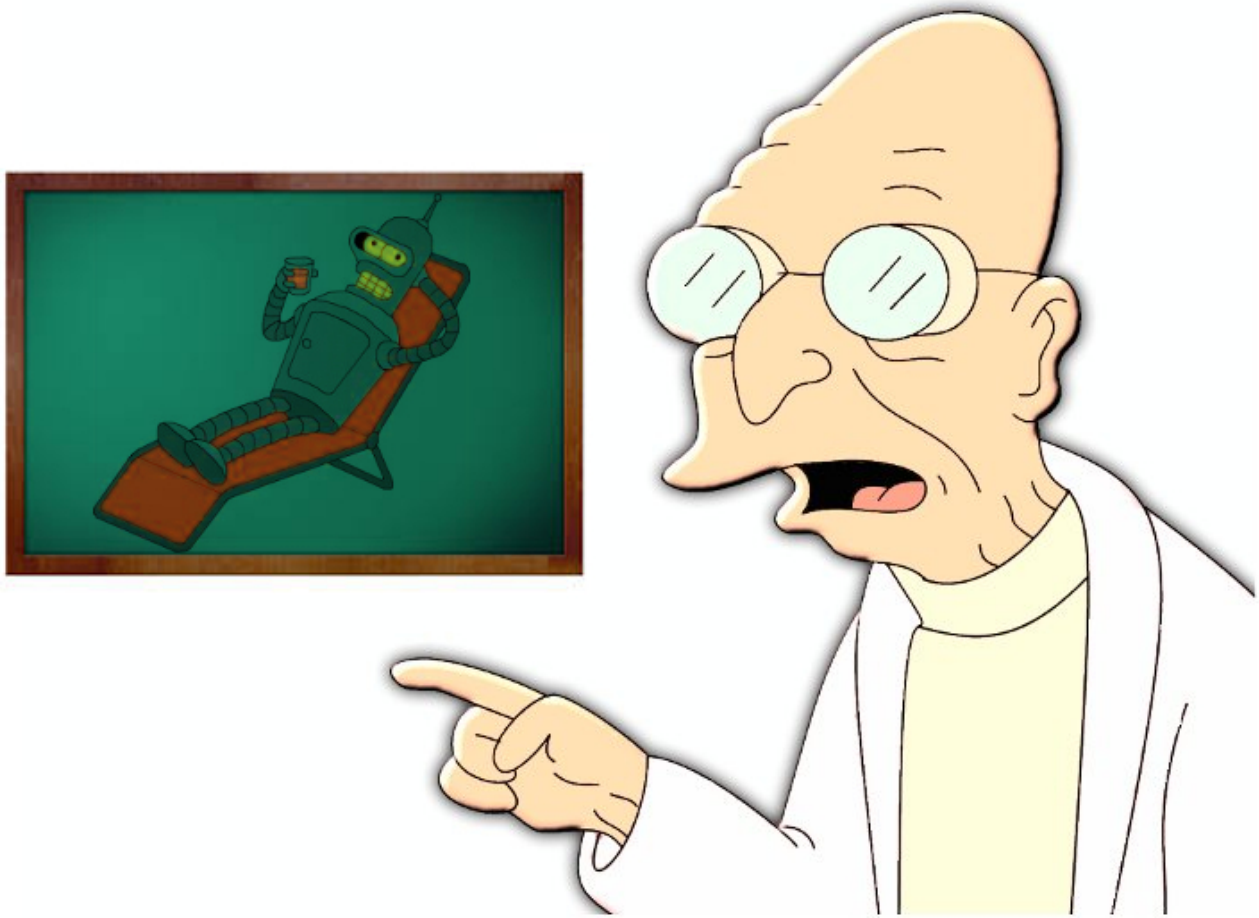
```
<range>
<min>0.10</min>
<max>30.0</max>
<resolution>0.01</resolution>
</range>
```

Skaner laserowy

Modyfikujemy plik 13-diffdrive.urdf.xacro z pakietu urdf_sim_tutorial

```
<noise>
<type>gaussian</type>
<mean>0.0</mean>
<stddev>0.01</stddev>
</noise>
</ray>
<plugin name="gazebo_ros_head_hokuyo_controller" filename="libgazebo_ros_laser.so">
<topicName>/rrbot/laser/scan</topicName>
<frameName>box</frameName>
</plugin>
</sensor>
</gazebo>
```

Dziękuję za uwagę



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