

Theory

- ### Exercise 1:

```
>> sudo apt-get install ros-noetic-hector-gazebo-plugins
>> sudo apt-get install ros-noetic-velodyne-description
>> ln -s /git/smb_common
>> catkin build smb_gazebo
>> source devel/setup.bash
```

Get to know ROS by inspecting the simulation of a Super Mega Bot (SMB) robot.

2. Launch the simulation with `roslaunch` and inspect the created nodes and their topics using (Lecture 1 Slides 11/12):

For more information take a look at the slides or:

<http://wiki.ros.org/rosnode>

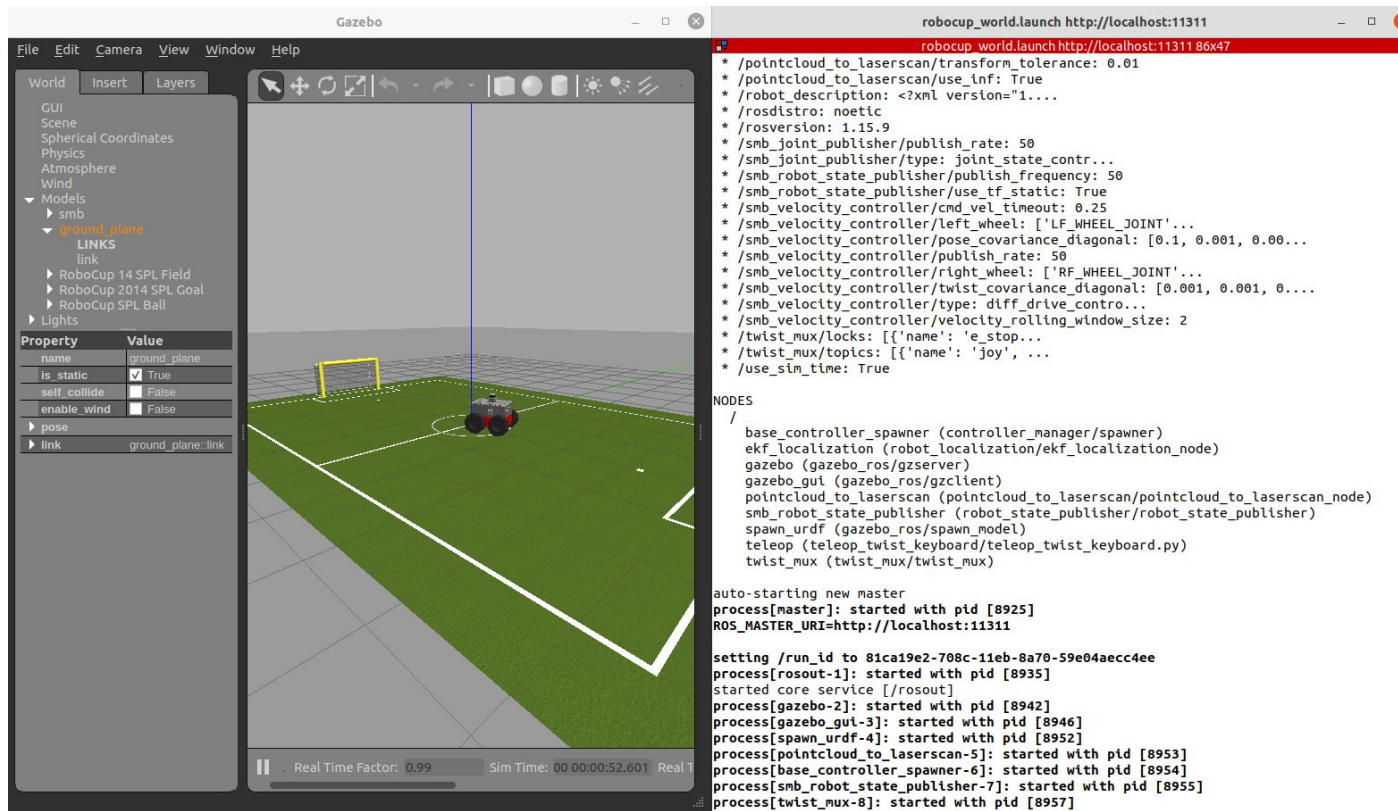
- For a short git overview see:

5. Write a launch file with the following content (Lecture 1 Slides 27-30):

- Include `smb_gazebo.launch` file and change the `world_file` argument to a world from the directory `/usr/share/gazebo-11/worlds` (e.g.

worlds/robocup14 spl field.world). This might take a little while to load

the first time. Note that the world_name is with respect to /usr/share/gazebo-11/



Left: Gazebo with Robocup14 World, Right: First lines of output when starting the launch file you have to set up

Evaluation

- ☐ Check if teleop_twist_keyboard is compiled from source (roscd teleop_twist_keyboard should show the smb_ws folder) [40%]
- ☐ Start the launch file. This should bring everything up that's needed to drive SMB with the keyboard as shown in the above image. [60%]

Hints

- If the robot stops again after sending the velocity command, specify the rate of the publisher. Check out `rostopic pub --help`.