

Connection to robair

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Outline

1. ROS on robair (wireless connection: experimental);
2. ROS on robair (wired connection);
3. ROS on robair: how it works;
4. Tests of connection to robair.

Change the configuration: **experimental** wireless connection

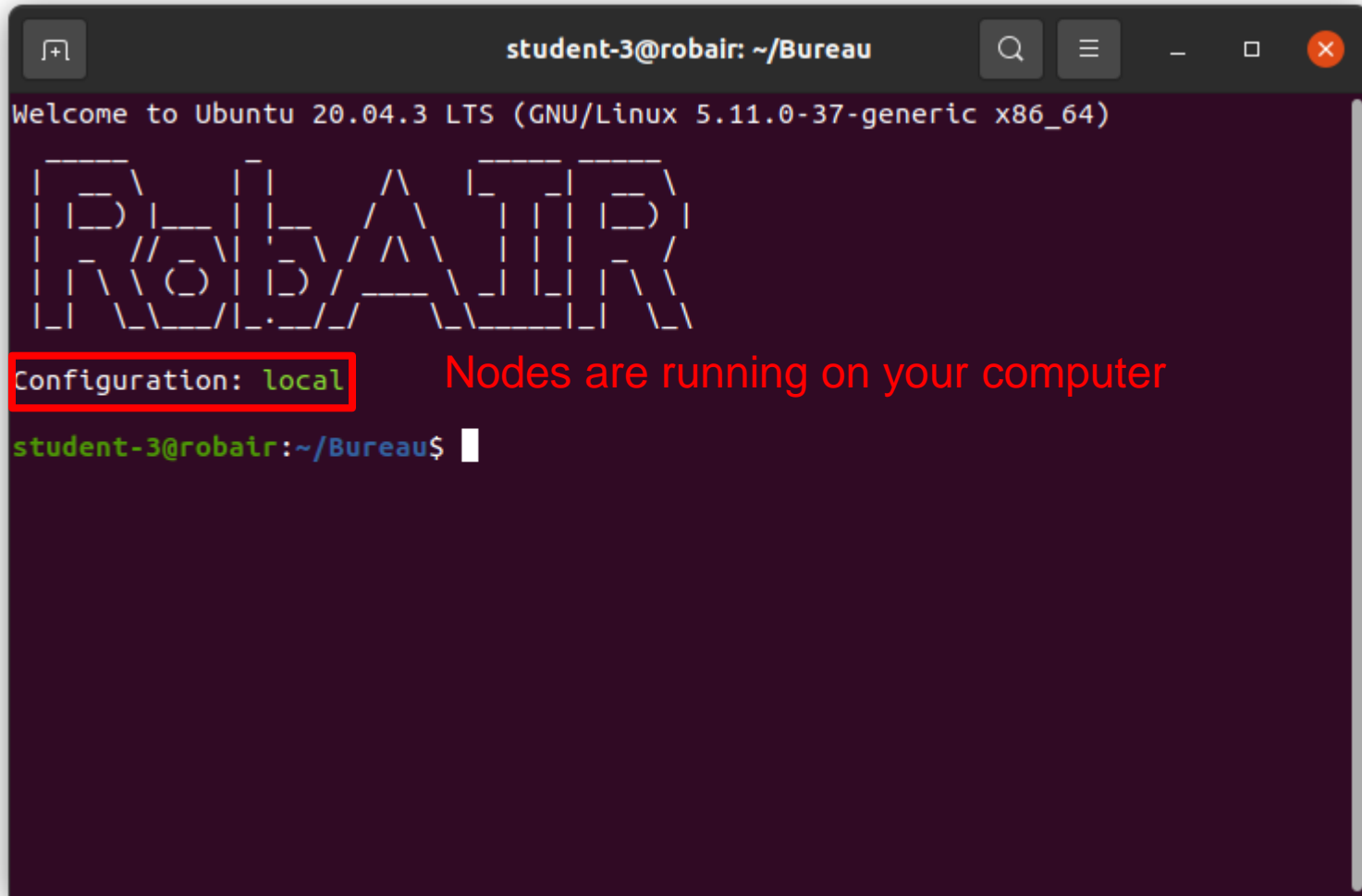
1. You can run ROS nodes on your computer or on robair;
2. Move `change_configuration.sh` from `~/catkin_ws/data_for_labs` to `~`
3. To run nodes on your laptop: `~/change_configuration.sh local`
 - **Open a new terminal**
4. To run nodes on one robair: `~/change_configuration.sh hotspot`
 - **Open a new terminal**
5. To connect to a hotspot: `robairx_hotspot`
 - **MDP: robairRobair42**

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Change the configuration: wired connection (1/4)

1. You can run ROS nodes on your computer or on robair;



A terminal window titled 'student-3@robair: ~/Bureau' with standard Ubuntu window controls. The terminal output shows the Ubuntu 20.04.3 LTS welcome message, the 'robair' ASCII art logo, and the configuration status 'Configuration: local'. A red box highlights the word 'local'. To the right of the terminal, red text reads 'Nodes are running on your computer'. The prompt 'student-3@robair:~/Bureau\$' is visible at the bottom.

```
student-3@robair: ~/Bureau
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-37-generic x86_64)

robair

Configuration: local
student-3@robair:~/Bureau$
```

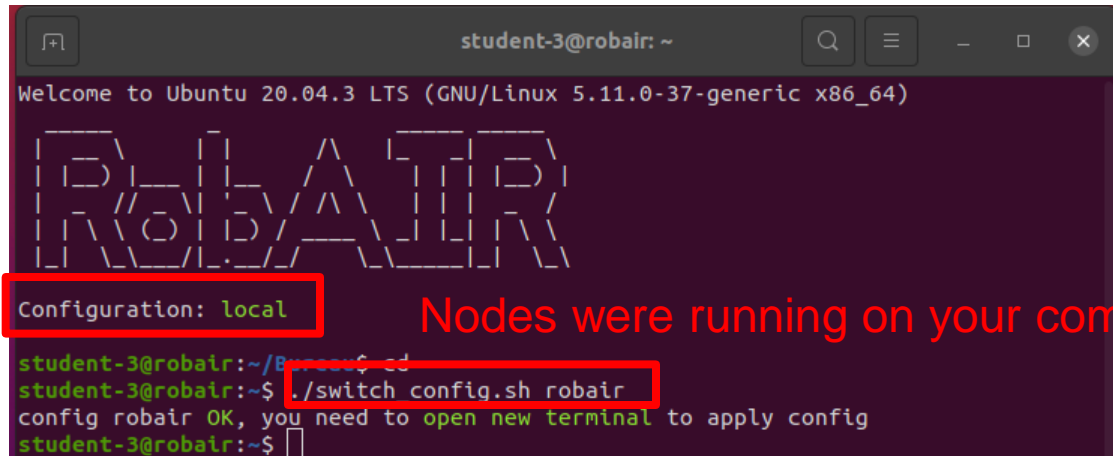
Nodes are running on your computer

1. You can run ROS nodes on your computer or on robair;



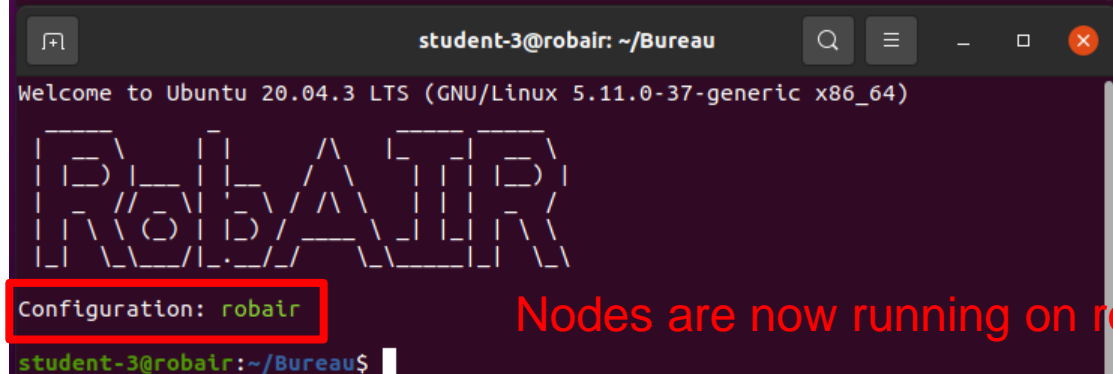
Change the configuration: : wired connection (3/4)

1. To change your configuration, run `switch_config.sh` in `~`



```
student-3@robair: ~  
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-37-generic x86_64)  
  
Robair  
Configuration: local  
student-3@robair:~/Bureau$  
student-3@robair:~$ ./switch_config.sh robair  
config robair OK, you need to open new terminal to apply config  
student-3@robair:~$
```

Nodes were running on your computer

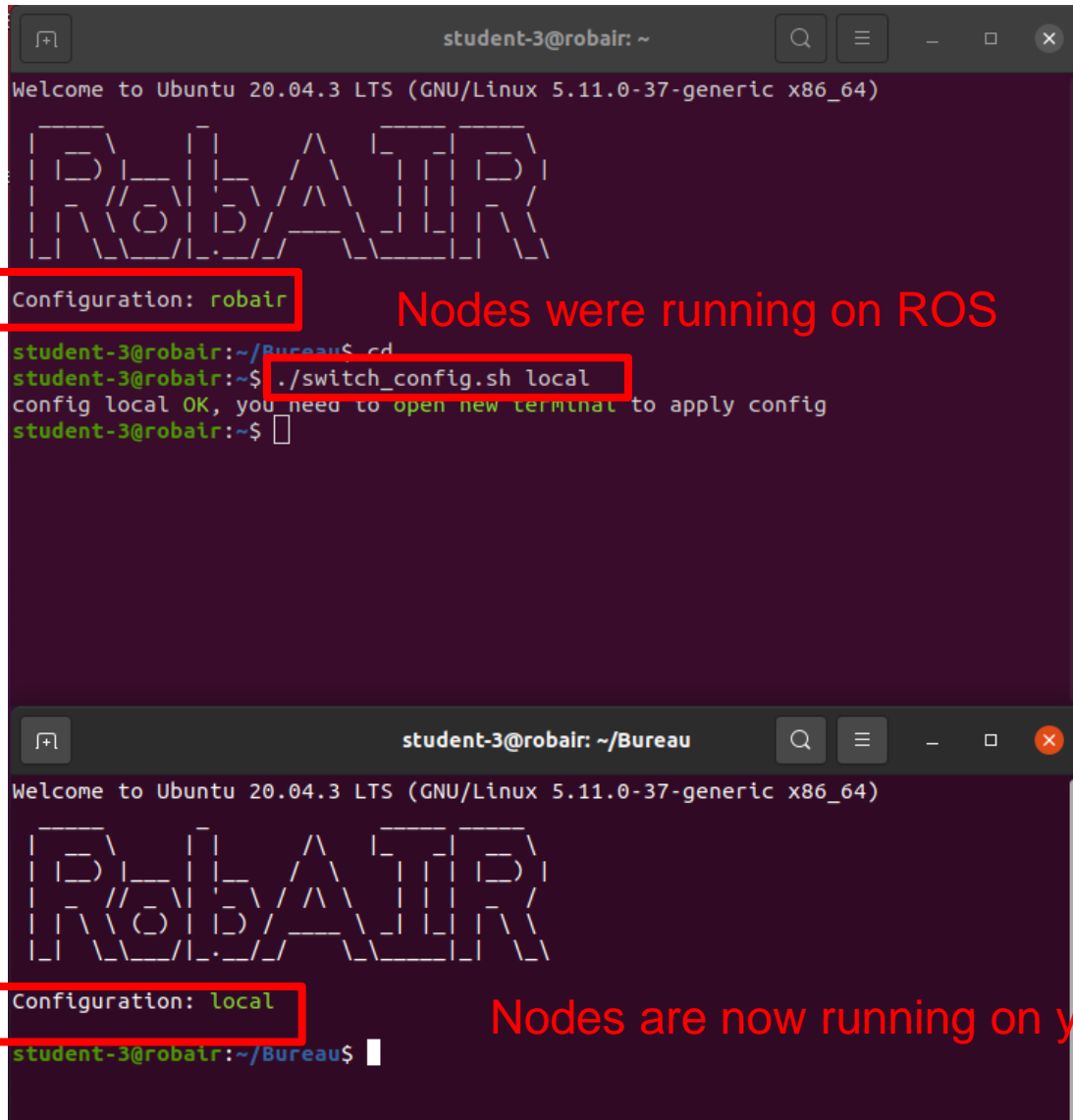


```
student-3@robair: ~/Bureau  
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-37-generic x86_64)  
  
Robair  
Configuration: robair  
student-3@robair:~/Bureau$
```

Nodes are now running on robair

Change the configuration: : wired connection (4/4)

1. To change your configuration, run `switch_config.sh` in `~`



The image displays two terminal windows from a user named 'student-3' on a machine named 'robair'. The top terminal window shows the initial state where the configuration is 'robair'. A red box highlights the text 'Configuration: robair'. Below this, the user runs the command `./switch_config.sh local`, which is also highlighted with a red box. The terminal output indicates that the configuration has been updated to 'local'. The bottom terminal window shows the same user at the same machine, but now the configuration is 'local', as indicated by the red box around 'Configuration: local'. Red text annotations are present next to the configuration changes in both windows.

```
student-3@robair: ~  
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-37-generic x86_64)  
ROB AIR  
Configuration: robair  
Nodes were running on ROS  
student-3@robair:~/Bureau$ cd  
student-3@robair:~$ ./switch_config.sh local  
config local OK, you need to open new terminal to apply config  
student-3@robair:~$  
  
student-3@robair: ~/Bureau  
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-37-generic x86_64)  
ROB AIR  
Configuration: local  
Nodes are now running on your computer  
student-3@robair:~/Bureau$
```

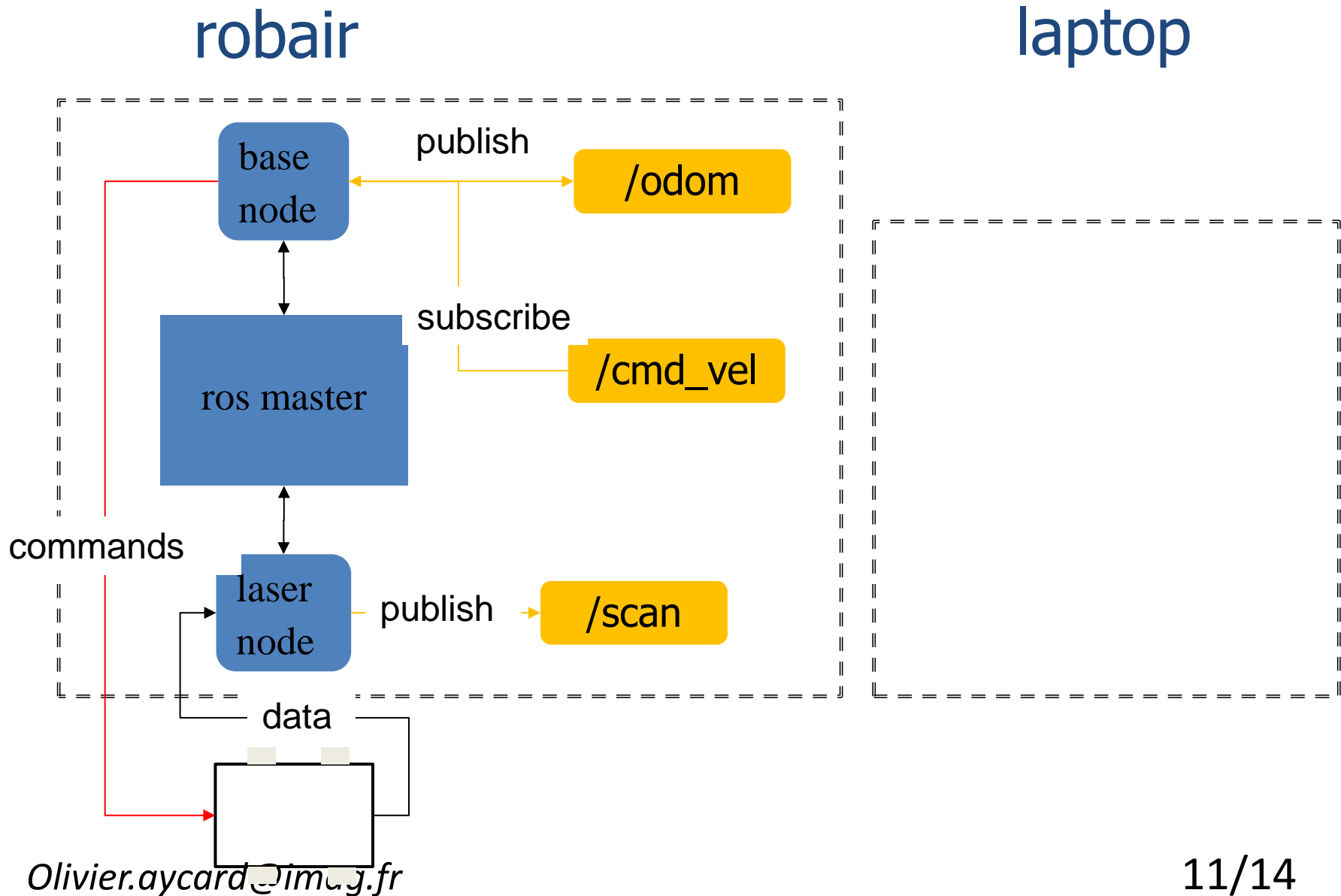

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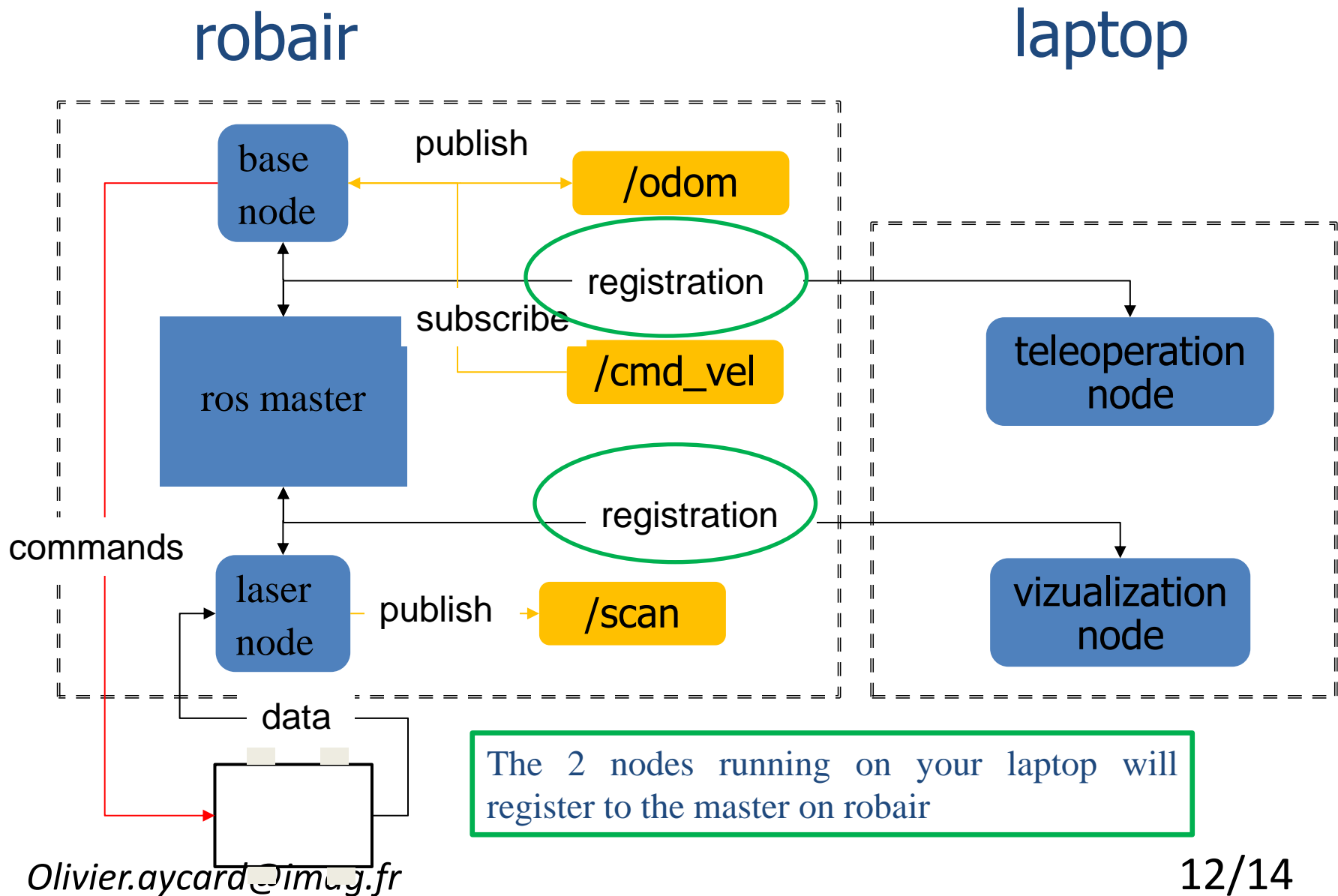
ROS on robair (1/5)

- You must be connected to robair with a wire to run nodes on robair
- Roscore is running on robair:
 - You do not have to run “roscore” on your laptop
- Each robair publishes:
 - /scan (laserscanner data);
 - /odom (odometry).
- Each robair subscribes to:
 - /cmd_vel to command robair in translation and/or rotation.

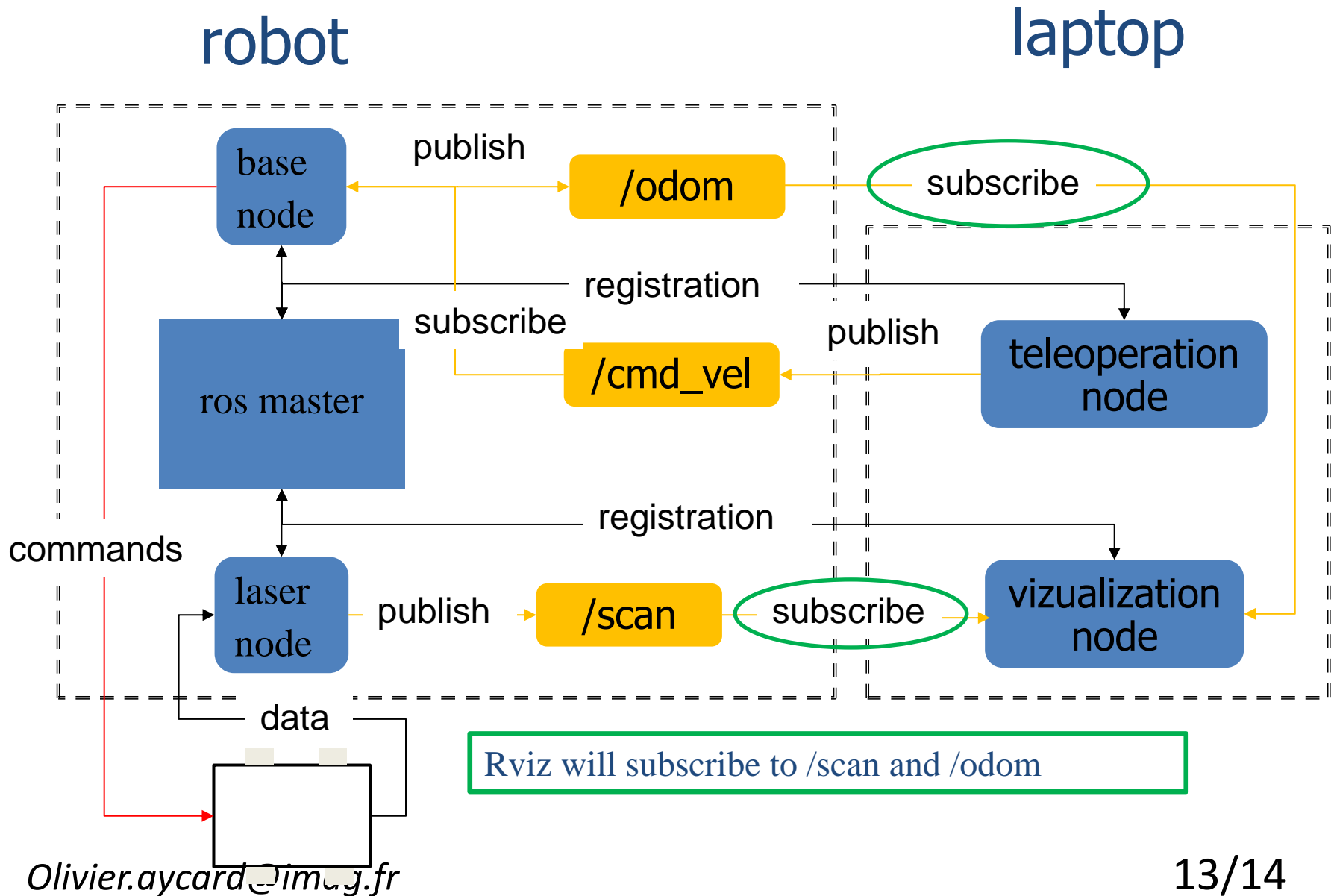
ROS on robair (2/5)



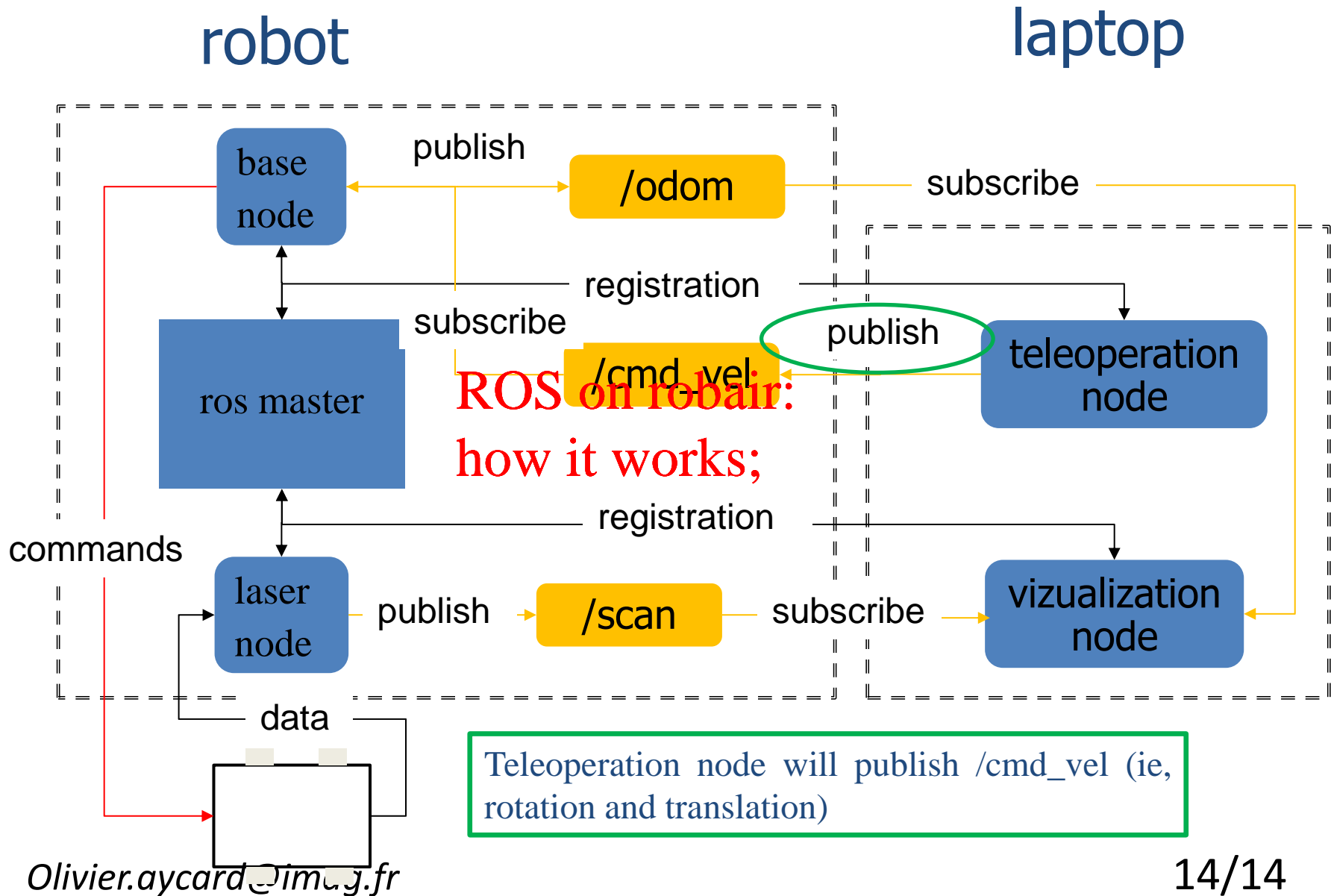
ROS on robair (3/5)



ROS on robair (4/5)



ROS on robair (5/5)



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Tests of connection on robair

- You do not have to run “roscore” on your laptop
 - Roscore is now on robair
 - We will check if you are able to receive the laser data (/scan topic) and send motion to robair (/cmd_vel topic)
-
1. Open a terminal and run rviz
 - You should see the data of the laser scanner
 2. Open a terminal and run “roslaunch teleoperation teleoperation_node.py”
 - Use the keyboard to move robair
 - You should see robair moving