Connection to robair

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Outline

1. Configuration of wired connection on robair;
2. ROS on robair;
3. Tests of connection to robair.

Configuration of wired connection on robair (1/3)

1. Download interfaces on the web page of the course;
2. Find the name of your network card: use “ip a” command;

```
olivier@pc-robair:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s31f6: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state DOWN group default qlen 1000
    link/ether c8:d3:ff:91:f4:bc brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.174/24 brd 192.168.0.255 scope global enp0s31f6
       valid_lft forever preferred_lft forever
3: wlp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether f0:d5:bf:c3:9d:ad brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.27/24 brd 192.168.1.255 scope global dynamic wlp2s0
       valid_lft 86090sec preferred_lft 86090sec
    inet6 2a01:cb15:803f:d000:1f24:1e81:1bce:beea/64 scope global noprefixroute dynamic
       valid_lft 1768sec preferred_lft 568sec
    inet6 fe80::8ae8:db47:7fb5:d682/64 scope link
       valid_lft forever preferred_lft forever
olivier@pc-robair:~$
```

Configuration of wired connection on robair (2/3)

3. Edit interfaces and change the name of your network card;

```
olivier@pc-robair:~$ more /etc/network/interfaces
# interfaces(5) file used by ifup(8) and ifdown(8)
auto lo
iface lo inet loopback


allow-hotplug enp0s31f6
iface enp0s31f6 inet static
address 192.168.0.174
broadcast 192.168.0.255
netmask 255.255.255.0
olivier@pc-robair:~$
```

4. Copy interfaces to /etc/network: you have to be “root” to do this copy;
5. Reboot your laptop.

Configuration of wired connection on robair (3/3)

1. Download setup_wired_connection.sh on the web page of the course;
2. Copy it ~/catkin_ws/devel;
3. Edit ~/.bashrc and add
   “source catkin_ws/devel/setup_wired_connection.sh”

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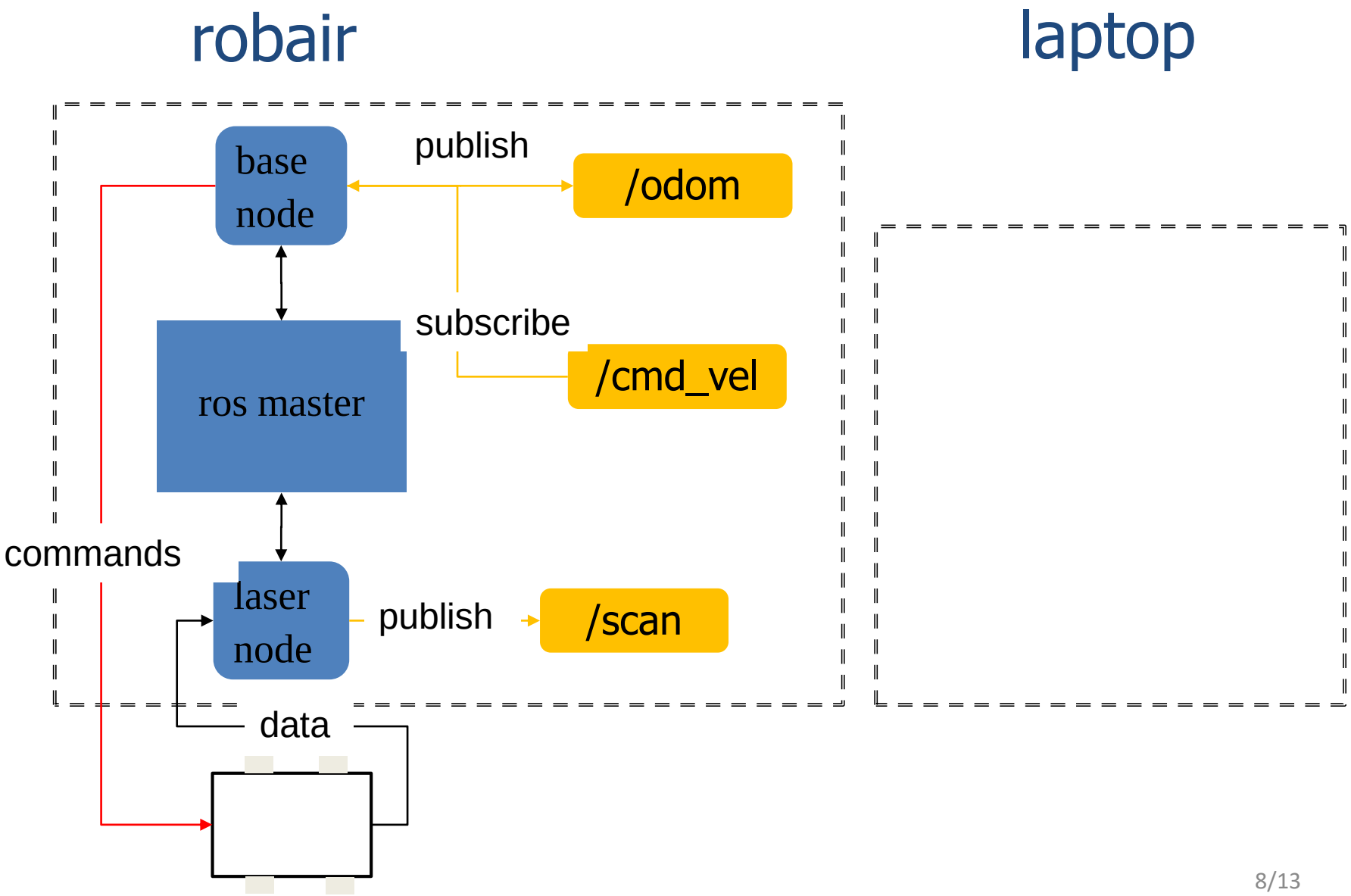
ROS on robair (1/5)

- Roscore is running on robair:
  - You do not have to run “roscore” on your laptop

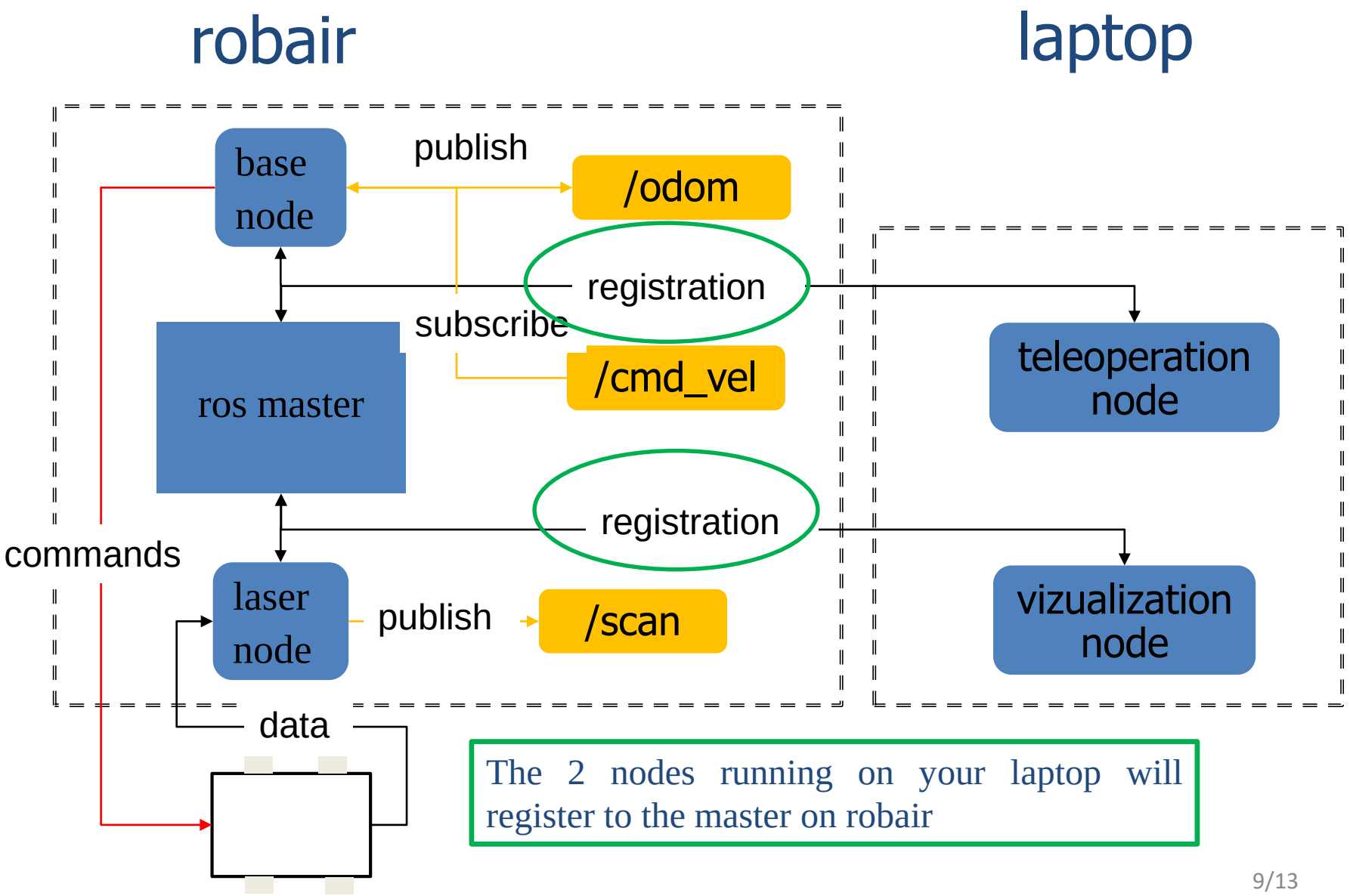
- Each robair publishes:
  - /scan (laserscanner data);
  - /odom (odometry).

- Each robair subscribes to:
  - /cmd_vel to command robair in translation and/or rotation.

ROS on robair (2/5)

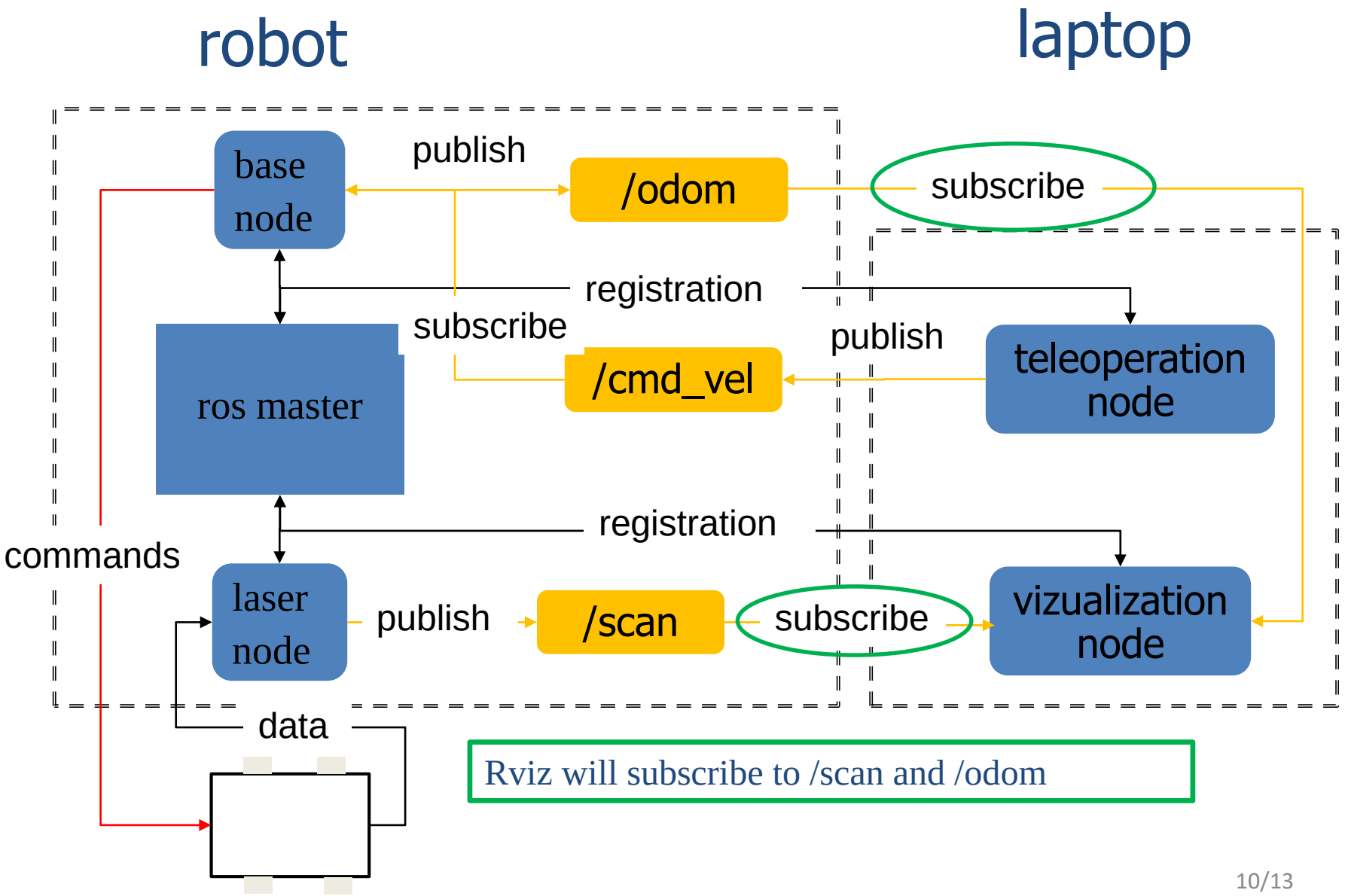


ROS on robair (3/5)



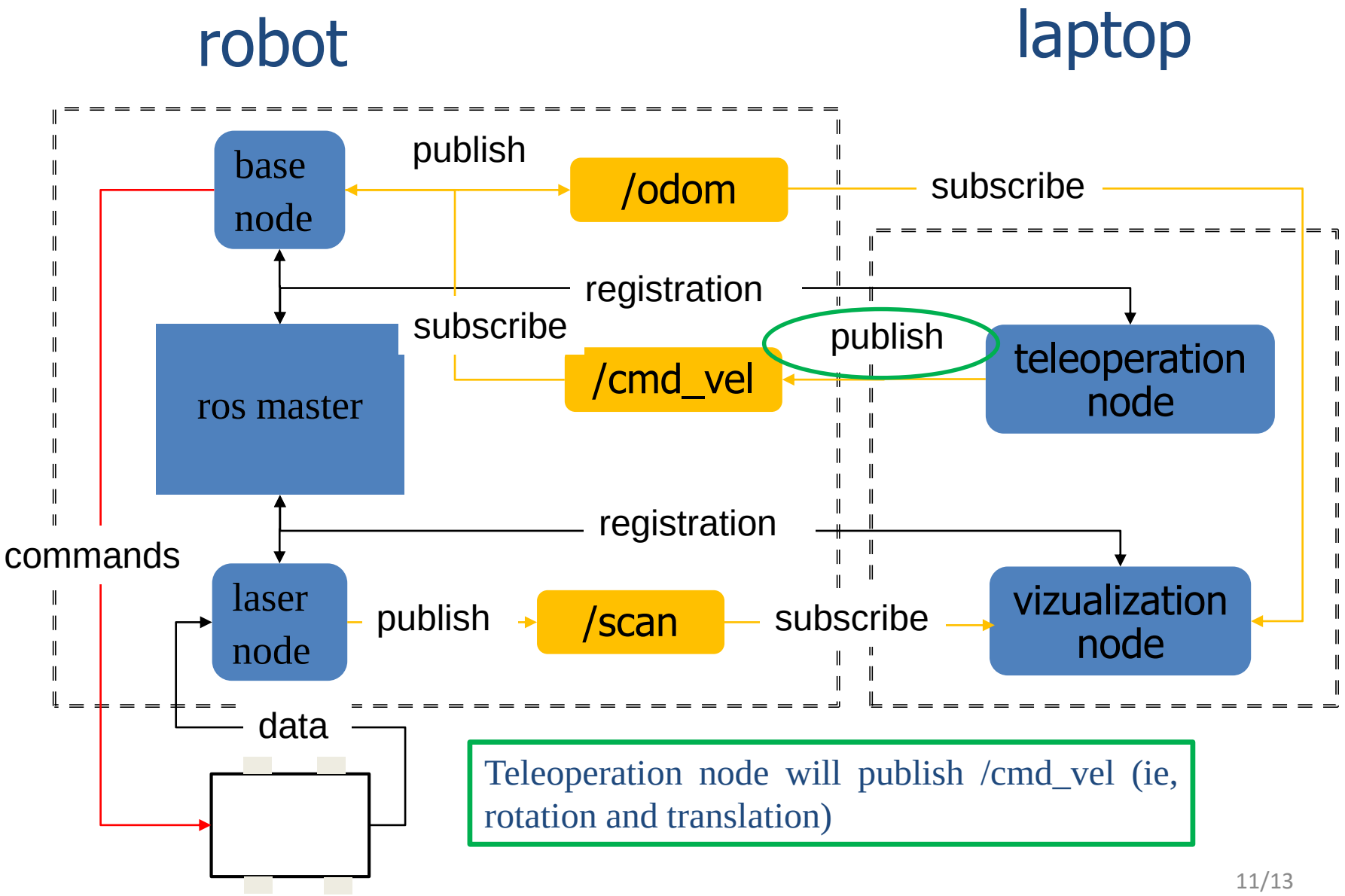
The 2 nodes running on your laptop will register to the master on robair

ROS on robair (4/5)



Rviz will subscribe to /scan and /odom

ROS on robair (5/5)



Teleoperation node will publish /cmd_vel (ie, rotation and translation)

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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. Download teleoperation.zip and extract it in ~/catkin_ws/src
3. Open a terminal and run “rosrun teleoperation teleoperation.py”
   - Use the keyboard to move robair