Exercise1: ROS Message

The department's robotics group bought an autonomous vacuum cleaner to automate the cleaning of its laboratories. The robotics group has 5 rooms and the robot has to vacuum all rooms. The robot publishes on a ROS topic the following data: name and ID of the room in which it is currently located and the level of charge of its battery. The topic is updated at 5Hz (i.e. the robot publishes at 5Hz its data on the topic). The charging station of the robot subscribes to the topic to know the robot's position and the remaining battery level of the robot at a frequency of 5Hz.

Structures you have to implement:

1. Create a custom Msg that contains the ID of the room, the name of the room and the battery level.
2. Create a node that represents the robot and implements the behavior described above.
3. Create a node that represents the charging station and implements the behavior described above. In addition, this node must print the information read from the robot's messages in a terminal window.

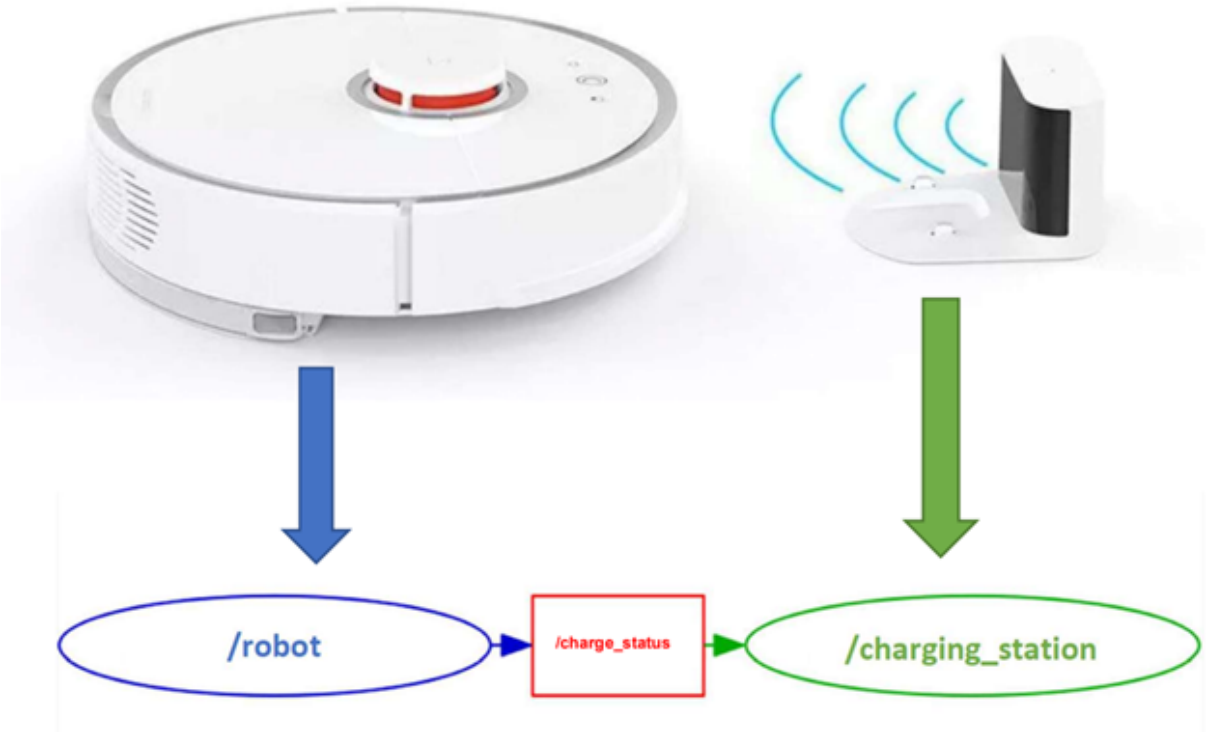
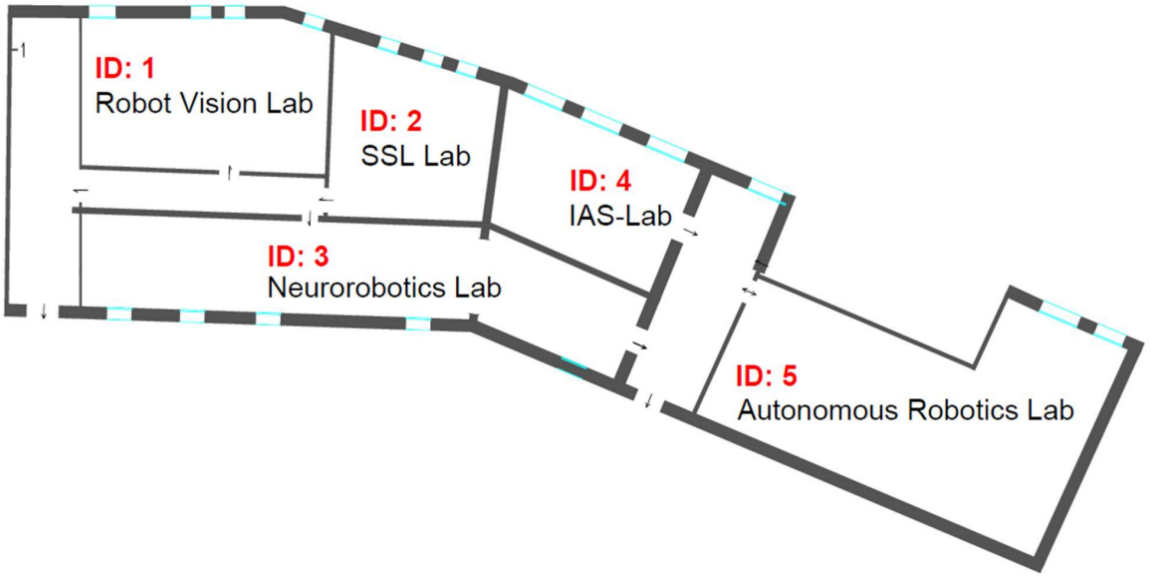


Fig.1: visual explanation of the problem. The "/robot" (publisher), will publish the message on topic "/charge_status" and the "/charging_station" (subscriber) will receive it.

In order to give a visual representation of the problem, you can use the IDs and names of the robotic and computer vision labs at DEI/O.



Legend:
IAS *= Intelligent Autonomous Systems (http://robotics.dei.unipd.it/)*
SSL *= Solid State Lightning*