SOFAR Lab 2
The « puppet arm » node

Goal

The goal of this lab is to program a node that can move the left arm of the Baxter robot in a symmetric way with respect to the motion of the right arm (symmetry with respect to the sagittal plane of the robot).
The node should be usable in position mode (the joint positions of the master arm are « copied to » the slave arm) or in velocity mode (the joint velocities of the master arm are « copied to » the slave arm). A parameter will be used to determine the behavior.
Important: In order to learn the process, you will develop the process starting « from scratch » using the provided skeleton package. Do not copy and paste some node found on the internet. It may (or may not) make the process faster, but **you would not be ready for the evaluation**.

Information

Given the definitions of Baxter's joint positive Z axes, the sign of positions/velocities must be inverted for some joints. Determine which ones before programming. Rviz can help.

Tasks

- Identify the topics that the node will subscribe/publish to.
- Draw the node/topic graph of the application.
- Program the node.
- Write launch files that prove that your node complies with points 1 and 2 of the goals and call the teacher for validation.

How to manage the tests

- A single node (from one group) at a time will be controlling the robot.
- We will use a **token** to manage access to the robot. The team who have the token are allowed to run their node. Others wait until they get the token.
- **Any** failure of the test causes the token to pass to the next group.
- Tests have no reason to be long for this lab.
- Tests can only be run **using launch files**.

Deliverables

After validation, zip your package and upload it to Hippocampus.

At the end of the lab

Backup your work to a personal medium (*e.g.* a pendrive) or email it to yourselves. Make sure both members of the team have a copy of the files.