MIDWA Lab 2
Programming the « puppet arm » node

Goal

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).

Deliverables

After validation, send a zip file of the full folder, including the PDF document to this address:
`salvador_8fb7@sendtodropbox.com`

Create a single zip file with all deliverables inside. Naming convention will be **`Name1_Name2_packagename_code.zip`** where code is a random string of four characters to make sure your submission cannot be overwritten, e.g. « Smith_Baker_xyrt.launch ».

No need for subject or message body: the document goes straight to a dedicated folder of my Dropbox account.

Informations

Hint : to create the control loop you must get the current **state** of the right arm and send **commands** to the left arm

Hit : to know the sign of the joint value you can observe in rviz how the TF frames are defined in both arms and compare.

Tasks

- Identify the topics that the node will subscribe/publish to.
- Draw the node/topic graph of the application. Write down the main design choices you make to comply with the goal. Do that in a short PDF documentation file (you can use LibreOffice Writer for that) that you will put in the node folder.
- Program the node.
- Write launch files that prove that your node complies with 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**.

At the end of the lab session: backup your work, just in case. Contrary to PCs of the ECN platform,

there is no automatic backup.