

Camera Intrinsic Calibration Check

To check that the intrinsic calibration has been effected correctly, you will need to print the image of the aruco marker below:

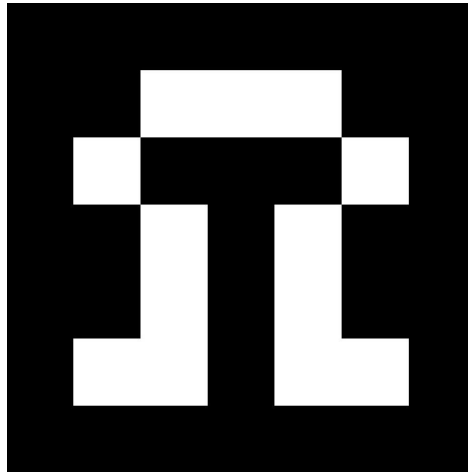


Figure 1: Aruco marker

Place the image in front of the TIAGo camera and open the following in three different terminals:

Unset

```
export ROS_MASTER_URI=http://|robohost|:11311
roslaunch aruco_ros marker_publisher
/camera_info:=/xtion/rgb/camera_info
/image:=/xtion/rgb/image_rect_color _marker_id:=582
_marker_size:=0.045 _camera_frame:=/xtion_optical_frame
_image_is_rectified:=true _reference_frame:=/base_footprint
```

Unset

```
export ROS_MASTER_URI=http://|robohost|:11311
roslaunch rqt_image_view rqt_image_view
image:=/aruco_marker_publisher/result/compressed
```

Unset

```
ssh pal@|robohost|
pal-stop head_manager
rostopic echo /aruco_marker_publisher/markers
```

When TIAGo detects the aruco marker, you will see something like this:

```
nsecs: 342602184
  frame_id: "/base_footprint"
markers:
  -
  header:
    seq: 0
    stamp:
      secs: 1655889443
      nsecs: 342602184
    frame_id: "/base_footprint"
  id: 582
  pose:
    pose:
      position:
        x: 0.42518521521
        y: -0.219930763732
        z: 1.15002627059
      orientation:
        x: 0.729458069545
        y: 0.0133921051869
        z: -0.682454117651
        w: 0.044361623008
    covariance: [0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0]
    confidence: 1.0
  --
  ]
```

Figure 2: Output in terminal after commands

Note down the initial values from x, y and z. Then move the aruco marker 10 cm to the right (X axis), to the back (Y axis) and upwards (Z axis) and make sure that the errors (difference between the initial and new values) are less than 0.3. If that is the case, you can consider your intrinsics calibration successful.