Working with Real Robot

Real Robot

Embedded micro Controller
(runs closed loop control for each actuator using encoder feedback)

Driving

Actuators

Encoders

Sensors

ROS serial

ROS Controller

Joint State Controller

Joint Position/Velocity /effort Controller

Joint State Interface

Joint Position/Velocity /effort Interface

{Hardware Interface}

Standard ROS Interface for Obtaining Joint State

Standard ROS Interface for Commanding Joints

Standard ROS Interface for Obtaining Sensor data

Node that read the Sensor data and publishes it
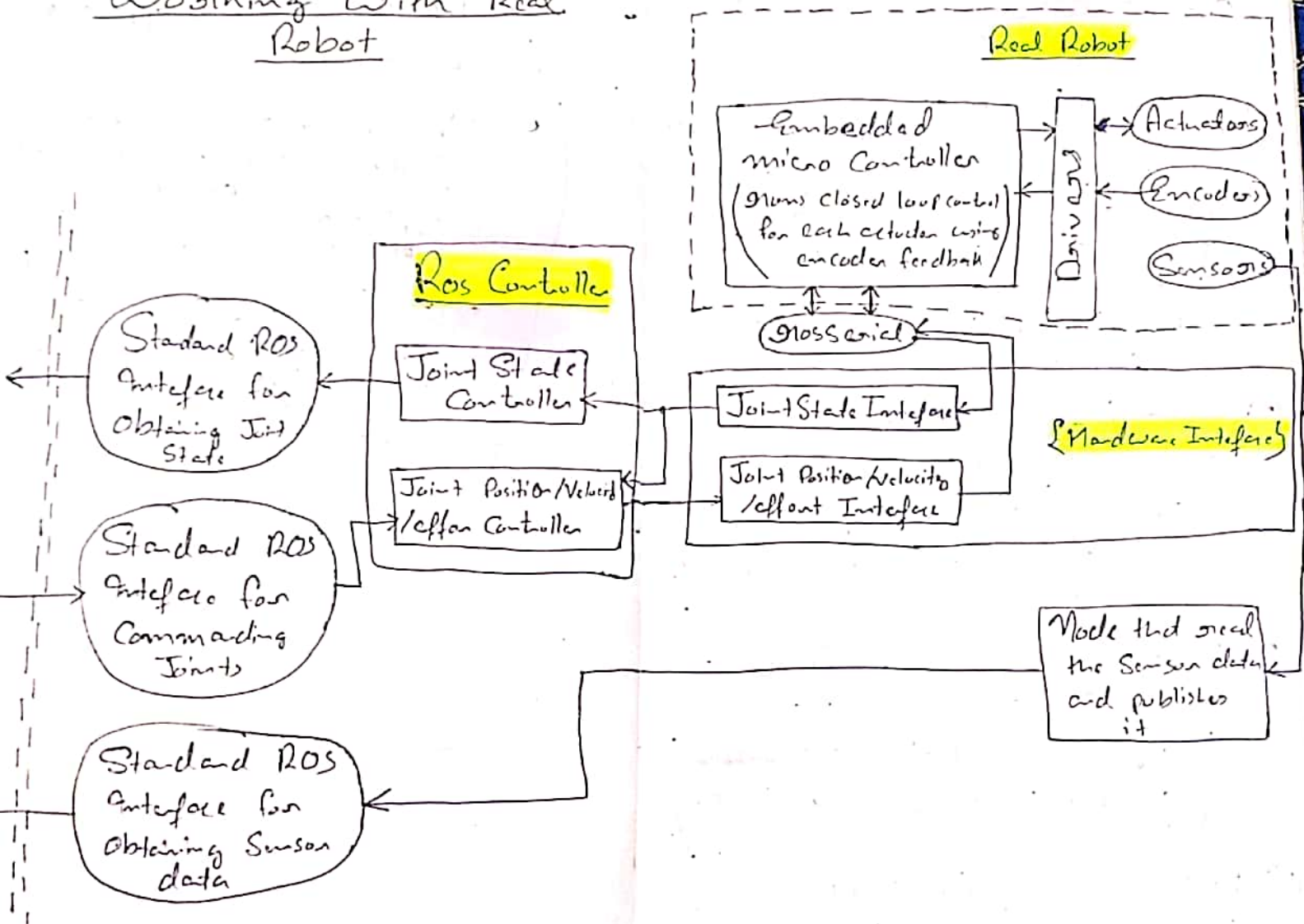
* <u>Workflow for Working with</u>
<u>Real Robot</u>

① Write the firmware for embedded micro Controller to run close loop control of all the actuator, interface all the basic Sensors (i.e. IMU) and Perform Serial Communication ~~totes~~ with the microprocessor using Standard Protocol established by grosserial.

② Write the hardware interface for the robot.

(Try to Select Standard hardware interface available wherever possible to save time.)

③ Write ROS Controllers for Controlling each joints.

(Try to use standard ros controller available whenever possible to Save time.)

④ Build a Simplified URDF model of your robot which will be then used by robot state publisher to publish tf data.

⑤ Write Application Software for Controlling your robot as a whole

⑥ Build UI application for your Robot.

_____ ✕ _____ ✕ _____