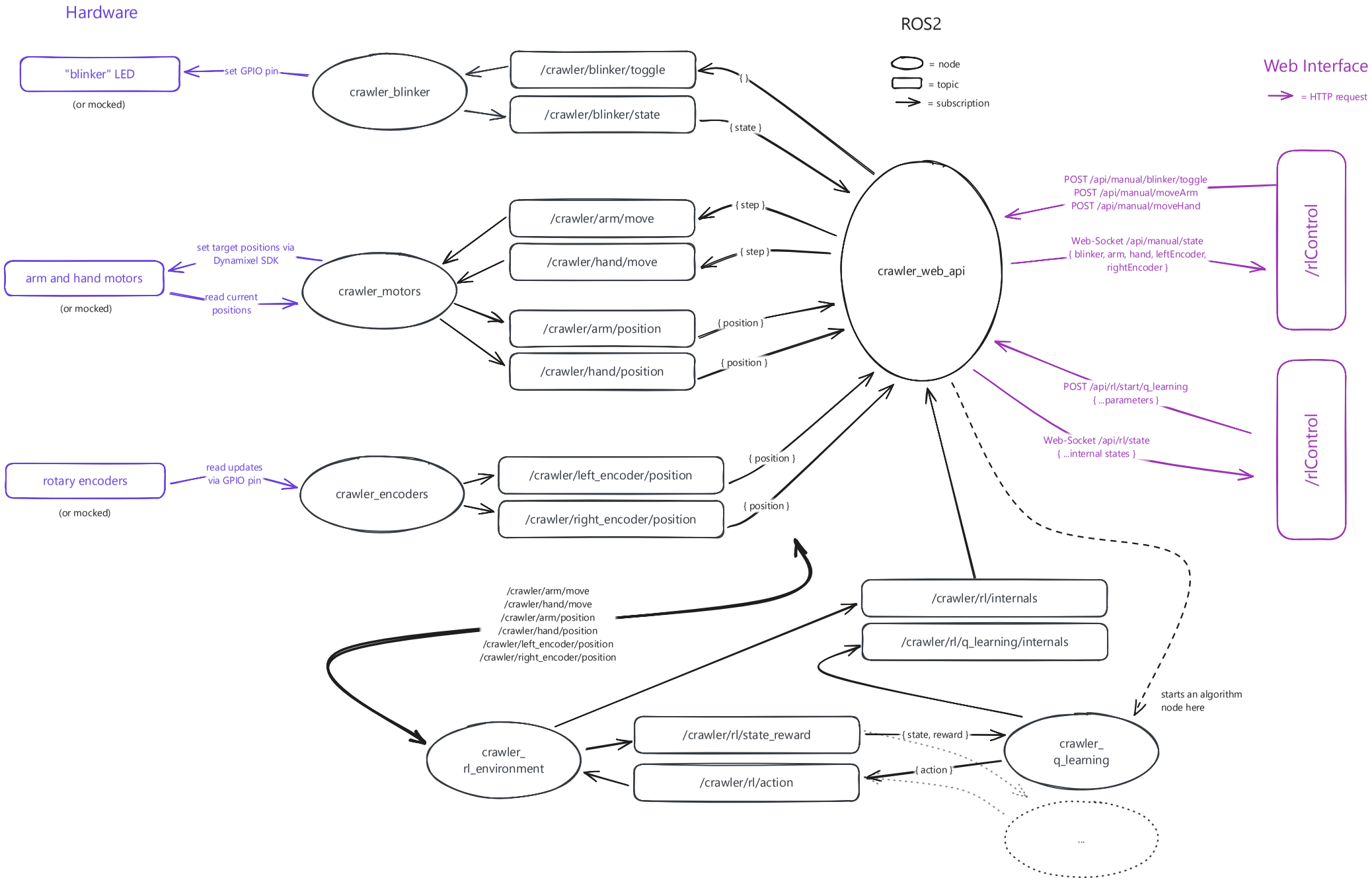
Hardware
ROS2
Web Interface
= node
= topic
= subscription
= HTTP request
"blinker" LED
(or mocked)
set GPIO pin
crawler_blinker
/crawler/blinker/toggle
/crawler/blinker/state
{ }
{ state }
arm and hand motors
(or mocked)
set target positions via Dynamixel SDK
read current positions
crawler_motors
/crawler/arm/move
/crawler/hand/move
/crawler/arm/position
/crawler/hand/position
{ step }
{ step }
{ position }
{ position }
crawler_web_api
POST /api/manual/blinker/toggle
POST /api/manual/moveArm
POST /api/manual/moveHand
Web-Socket /api/manual/state
{ blinker, arm, hand, leftEncoder, rightEncoder }
/rlControl
POST /api/rl/start/q_learning
{ ...parameters }
Web-Socket /api/rl/state
{ ...internal states }
/rlControl
rotary encoders
(or mocked)
read updates via GPIO pin
crawler_encoders
/crawler/left_encoder/position
/crawler/right_encoder/position
{ position }
{ position }
/crawler/arm/move
/crawler/hand/move
/crawler/arm/position
/crawler/hand/position
/crawler/left_encoder/position
/crawler/right_encoder/position
/crawler/rl/internals
/crawler/rl/q_learning/internals
starts an algorithm node here
crawler_ rl_environment
/crawler/rl/state_reward
/crawler/rl/action
{ state, reward }
{ action }
crawler_ q_learning
...