Kuka XML CRCL Usage

Version 1.0

Directions for running the Kuka XML with CRCL to the KR-5sixx in Henrik’s lab.

# Hardware Configuration

The control computer should be directly connected to the robot via an Ethernet cable. Use the port closest to the power button and set the IP address by hand. The IP address of the control computer should be set to 192.168.1.42.

# Software Configuration

## Control Computer Side Running CRCL

* Log into the machine (Username: gtrirobot Password: gtrirobot).
* On the control computer, you must have a copy of the XML file stored locally.
* The server will be started first. Run kukaServer from ~/el-robotics-core/CRCL/bin. (./kukaServer)

## Robot Side Running kuka\_demo.src

* You must first make sure that you are the administrator. To do this:
  + Set the selector switch to the bottom left ‘T’.
  + Go to the configure menu, and under user group you need to be administrator.
  + If not, select bottom buttons and set. The password is ‘kuka’
* Make sure that the socket is turned on
  + Go to monitor, I/O, Digital output
  + Want ‘1’ to be red or on for output.
  + To change, you must hold the deadman and press the value button.
* Run correct file from the program screen (blue button changes areas on display)
  + Select the kuka source file (kuka\_demo) from the R1 directory
  + The blue button moves between screens and the right yellow button selects
  + Put mode selector to top left (spiral with no dot)
  + Press motor enable (the button with a circle with a ‘1’ in it)
  + Acknowledge all errors, rest the program with the menu item program->reset program.
  + Press green circle with a ‘+’ in it (run).
  + Press run multiple times to get to RSI loop.
  + If trying to reconnect after disconnecting, you must reset the program. (Program → Reset program.)

## Moving Arm

* In a separate terminal, run crclClient from ~/el-robotics-core/CRCL/bin. The movements will happen as programmed.
* The units are degrees and millimeters. The velocity is millimeters per second.
* The movements are represented as ‘[x, y, z]’ ‘[roll, pitch, yaw]’

## Manual Move of Arm

* Selector to “circle-T” with dots
* Select hand with x on left
* Select globe on right for joints
* Select top left button (rotate through modes) with deadman until motors enable