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EECS 600, Fall 2015

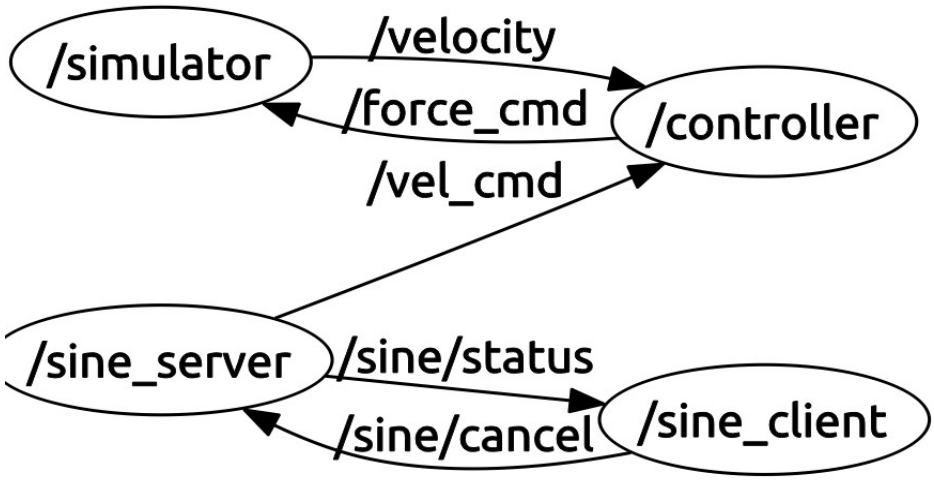
PS3: Action Client & Server Nodes

For assignment 3, you will build an action server and action client pair. Your action client should prompt you to input an amplitude, a frequency and a number of cycles. The action client should send this as a "goal" message (an action message that you must define in an action file).

Your velocity commander should be modified to become an action server. It should receive goals from action clients and perform the desired operation (command velocities at the specified amplitude, frequency and number of cycles). I should inform the client of "goal succeeded" when the action is complete (and command a velocity of zero as it's last command).

Submit your code, including action server, action client and action message. Also submit screenshots of successful operation.

In this assignment, the action client connects to the action server, accepts user input for desired amplitude, frequency and number of cycles, passes the inputs as goals (/sine) to the action server, and accepts a boolean as a result from the action server. The action server publishes a topic vel_cmd, which is subscribed to by the controller and simulator nodes from previous assignments. These relationships are shown in the flowchart below, obtained using rqt_graph.



The steps to run the project are as follows:

1) First terminal: roscd, catkin_make, roscore.
2) Second terminal: roslaunch ps3_kvc2 ps3_kvc2.launch
3) Third terminal: rqt_plot
4) Fourth terminal: rosrun ps3_kvc2 sine_client
5) In terminal 4, supply numbers and watch rqt_plot change.