ROS Topics

This page is a description of all the topics we are using (or plan to use) on the sub. Below is a symbolic representation of data flow on the sub (with sensors as we have right now).

Sensors

/orientation

Message: geometry_msgs/Quaternion
The current orientation of the sub, given as a quaternion. Any code wanting to know the sub's orientation should use this topic, not /orientation/rpy.

/pretty/orientation

Message: robosub/Euler
The current orientation of the sub, given in roll, pitch, yaw. This is meant just for human readability of the sub's orientation, code should use the /orientation topic.

/depth

Message: std_msgs/Float32
The current depth of the sub.

Movement

/thruster

Message: robosub/thruster
Dynamic array of commands going to the thrusters. Order of the thrusters is dependent on their order in the settings file.
/control

Message: robosub/control
Send messages to this topic to move the sub around, the control system subscribes to this topic.

/joystick_driver

Message: robosub/joystick This is the raw joystick state, published by the joystick driver. Shows the current state of all axes and buttons on the joystick.

/gamepad_driver

Message: robosub/gamepad This is the raw gamepad state, published by the gamepad driver. Shows the current state of all axes and buttons on the gamepad.

Vision

/camera/(left|right|bottom)/image

Message: wfov_camera_msgs/WFOVImage
Images from our cameras.

/vision

Message: rs_yolo/DetectionArray
Results of the deep vision processing system. It's a list detailing all the objects it sees.

Hydrophones

/hydrophones/[Frequency]/deltas

Message: Duplicated for all frequencies in the pool. Contains the latest time deltas between the reference and other 3 hydrophones.

<table>
<thead>
<tr>
<th>Header</th>
<th>header</th>
</tr>
</thead>
<tbody>
<tr>
<td>duration</td>
<td>d1</td>
</tr>
<tr>
<td>duration</td>
<td>d2</td>
</tr>
<tr>
<td>duration</td>
<td>d3</td>
</tr>
</tbody>
</table>
/hydrophones/[Frequency]/timestamps

Message: Duplicated for all frequencies in the pool. Contains the latest timestamps recorded by the system.

| Header header
| Time ref
| Time t1
| Time t2
| Time t3 |

/hydrophones/[Frequency]/debug

Message: Used for debugging the hydrophone system.

| Header header
| Int64 frequency
| Int64 avg_sig_strength
| Float64 approx_angle |

/hydrophones/bearing

Message: geometry_msgs/Vector3Stamped
A 3-dimensional vector pointing at the pinger in $i,j,k$ notation.

From: https://robosub.eecs.wsu.edu/wiki/ - Palouse RoboSub Technical Documentation

Permanent link: https://robosub.eecs.wsu.edu/wiki/cs/topics_list/start

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