Simulator Bridge

The simulator bridge is ROS node which subscribes to the /gazebo/model_states message that gazebo publishes. The model states message contains position, orientation, linear velocity, and angular velocity for each model in the simulator. This includes the sub, the top of the water, the start gate, the pinger, etc. The simulator bridge is responsible for taking the model states input and outputting the following information on the specified topics:

- The subs true position (/position)
- The subs true orientation (/orientation)
- The subs true orientation in roll, pitch, yaw (/orientation/pretty)
- The subs true depth (/depth)
- A list of the true positions of the pool obstacles (/obstacles/positions)
- Simulated hydrophone system output (/hydrophone/30khz/delta)