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Sunk Robotics JENA Float

Movement:

The JENA Float uses a buoyancy engine, there is a piston at the bottom of the vertically profiling float that moves water from outside to the inside of the robot. The air inside of the float is put under a vacuum when JENA attempts to move up causing the float as a whole to become less dense. When JENA moves down the air inside of the float returns to the pressure outside of the tube.

Safety:

At Sunk Robotics safety is our #1 priority. Our float is designed to be fail safe. Our first line of defense is that we never increase the pressure above that of the outside pool. JENA operates by pulling a vacuum rather than pressurizing the cylinder. If for some reason that fails, we have a 2.5cm rubber stopper that can release any built up pressure.

Communication:

We are using WiFi and Websockets through an external antenna that sits just above the water when the float is at the surface. The laptop used to communicate with JENA creates an access point that it connects to when it surfaces.

Over websockets JENA can receive and interpret the following commands:
- **profile** - causes the float to complete a full vertical profile
- **get_data** - returns collected depth data
- **get_pressure** - returns collected pressure data
- **break** - cancels communication with the float and causes the float to return to it's awaiting communication mode

The depth or pressure data is returned in an array where each number represents 5 seconds elapsing in float time and each value is the depth or pressure at that point.The laptop that connects to the float automatically graphs the data.

Sunk Robotics' JENA