iGlide: An ROV SeaGlide Design Engineered To Collect Oil in a Marine Environment

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Oil spills have become a major problem in waterways around the world, more specifically, the Gulf of Mexico. With increasing risks and effects, the necessity of oil containment has become a hot topic. Several innovations have been used to facilitate this problem in marine environments. Such innovations like containment booms; a floating, physical barrier, made of plastic, metal, or other materials, which slow the spread of oil and keep it contained. This work introduces a combined approach on collecting spilled oil in waterways. The iGlide is powered by a 9V Li-Ion battery, the design contains a buoyancy engine, pitch control, wings, and a rudder. The are three components that are needed in order for the researches to have control of the iGlide which are the Arduino IDE; SeaGlide software code that can be edited, the FTDI board; hardware that enables the computer to talk to the Arduino Pro Mini, and the SeaGlide Firmware; code that contains the instructions of the glider's functions. The iGlide has adopted a combination of different existing innovations to create its design. The booms that were adopted by the iGlide were made out of stockings filled with wig hair to collect the oil as the iGlide is moving along the waterways. Controlled testing of the iGlide came from a pool. There were a total of three 1-minute trials; the number of booms attached varied in each trial starting with 3 leading up to 5. The design captured 40% of oil in a simulated marine environment.

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