



DESIGN OF A PROTOTYPE UNDERWATER RESEARCH PLATFORM FOR SWARM ROBOTICS

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Abstract—To perform under water robotic research requires specialized equipment. A few pieces of electronics atop a set of wheels is not going to cut it. An underwater research platform must be waterproof, reliable, robust, recoverable and easy to maintain. It must also be able to move in 3 dimensions. Also it must be able to navigate and avoid obstacles. Further if this platform is to be part of a swarm of like platforms then it must be cost effective and relatively small. To purchase such a platform can be very expensive. However, for shallow water, a suitable platform can be built from mostly off the shelf items at little cost. This article describes the design of one such underwater robot including various sensors and communications systems that allow for swarm robotics. Whilst the robotic platform performs well, to explore what many of them would do, that is more than are available, simulation is required. This article continues to study how best to simulate these robots for a swarm, or system of systems, approach.

Key Words: Robots, Underwater vehicles, design, system of systems