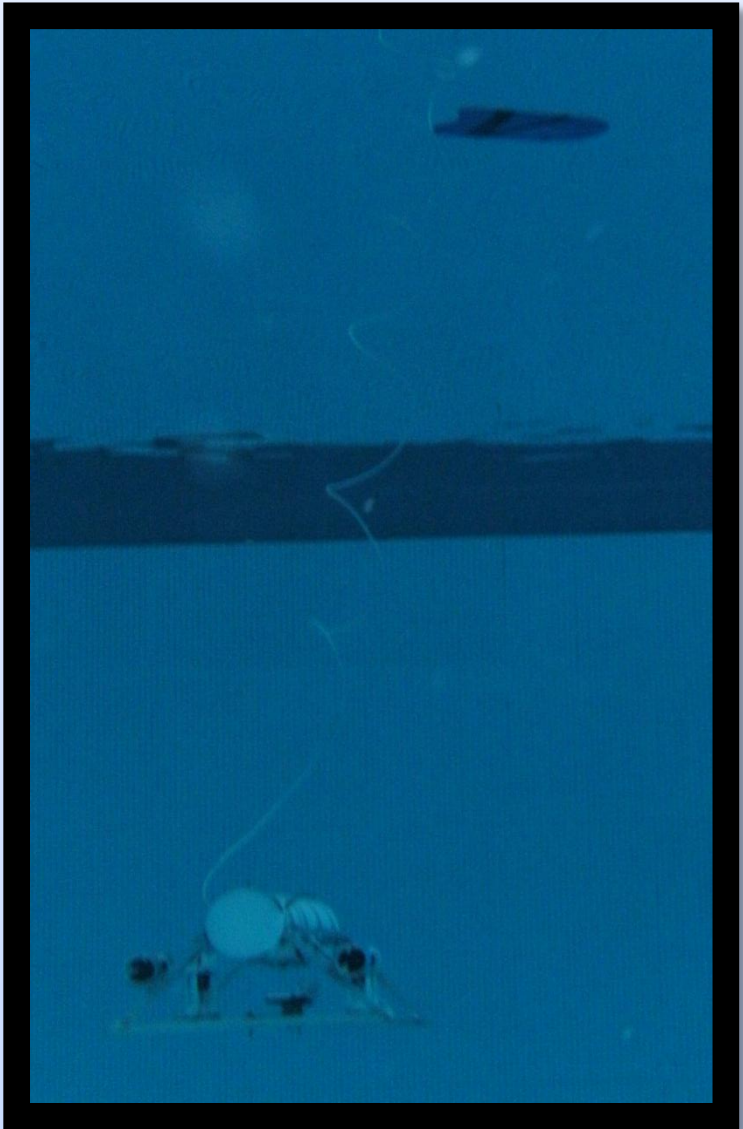





Collaborative Autonomous Underwater Systems

Peter Roberts Suraj Joseph Rochak Chadha Suresh Gopalakrishnan

Project STINGRAIS aims to develop a system of underwater vehicles collaborating to detect and track a submarine, for various mission-critical scenarios such as anti-submarine warfare, harbor security and maritime convoy protection.

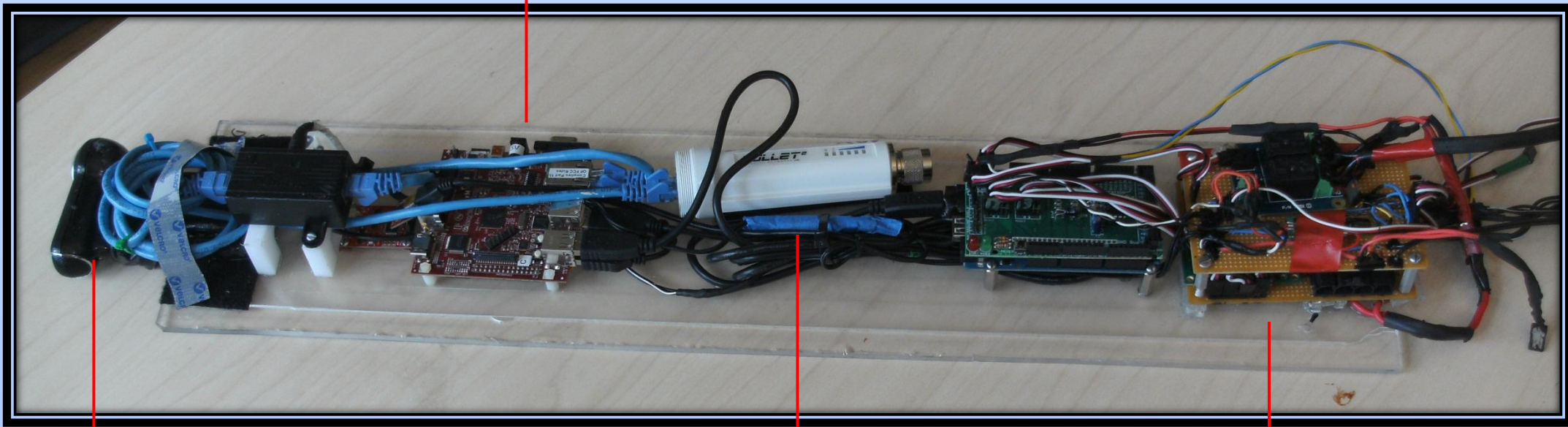


Floating antenna for communications



The Ground Station

The System

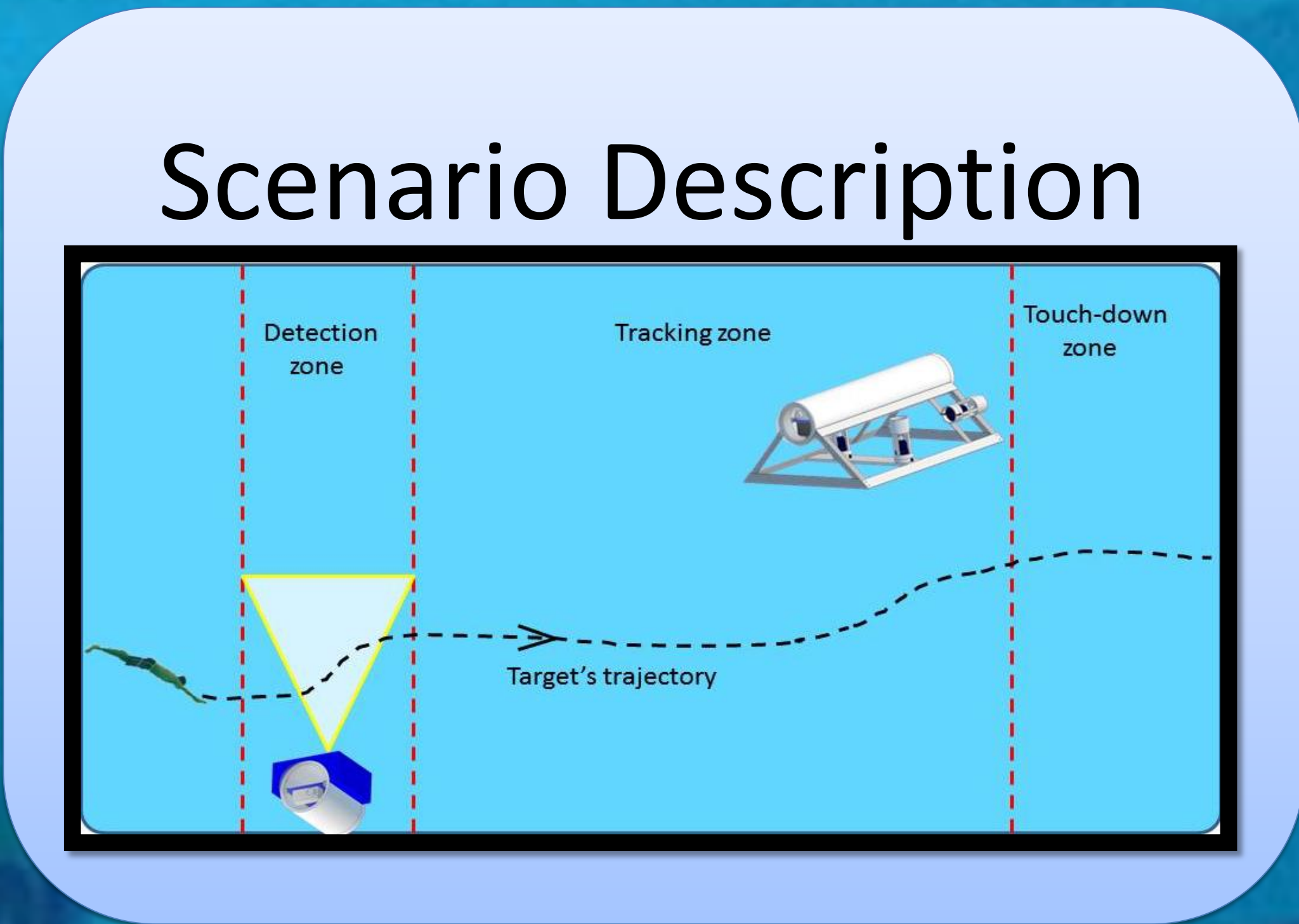


Single Board Computer

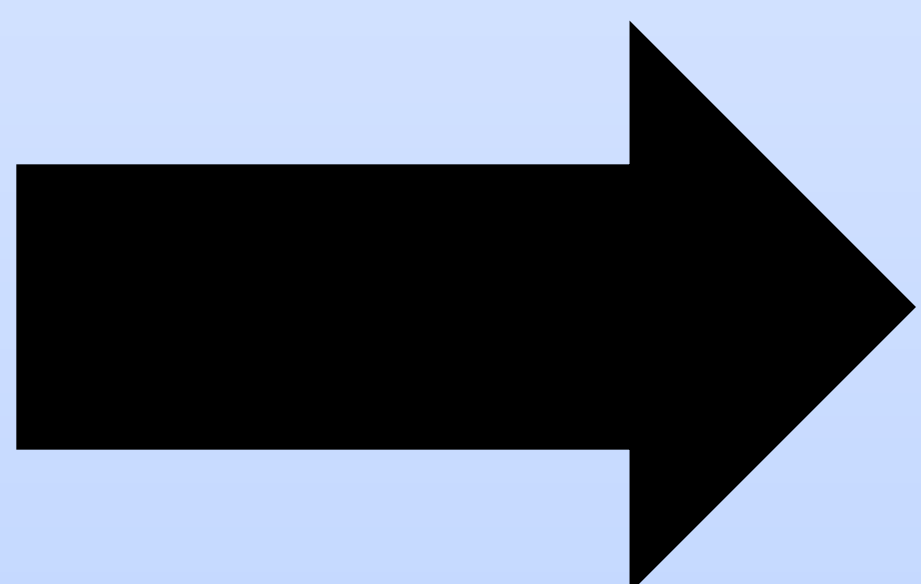
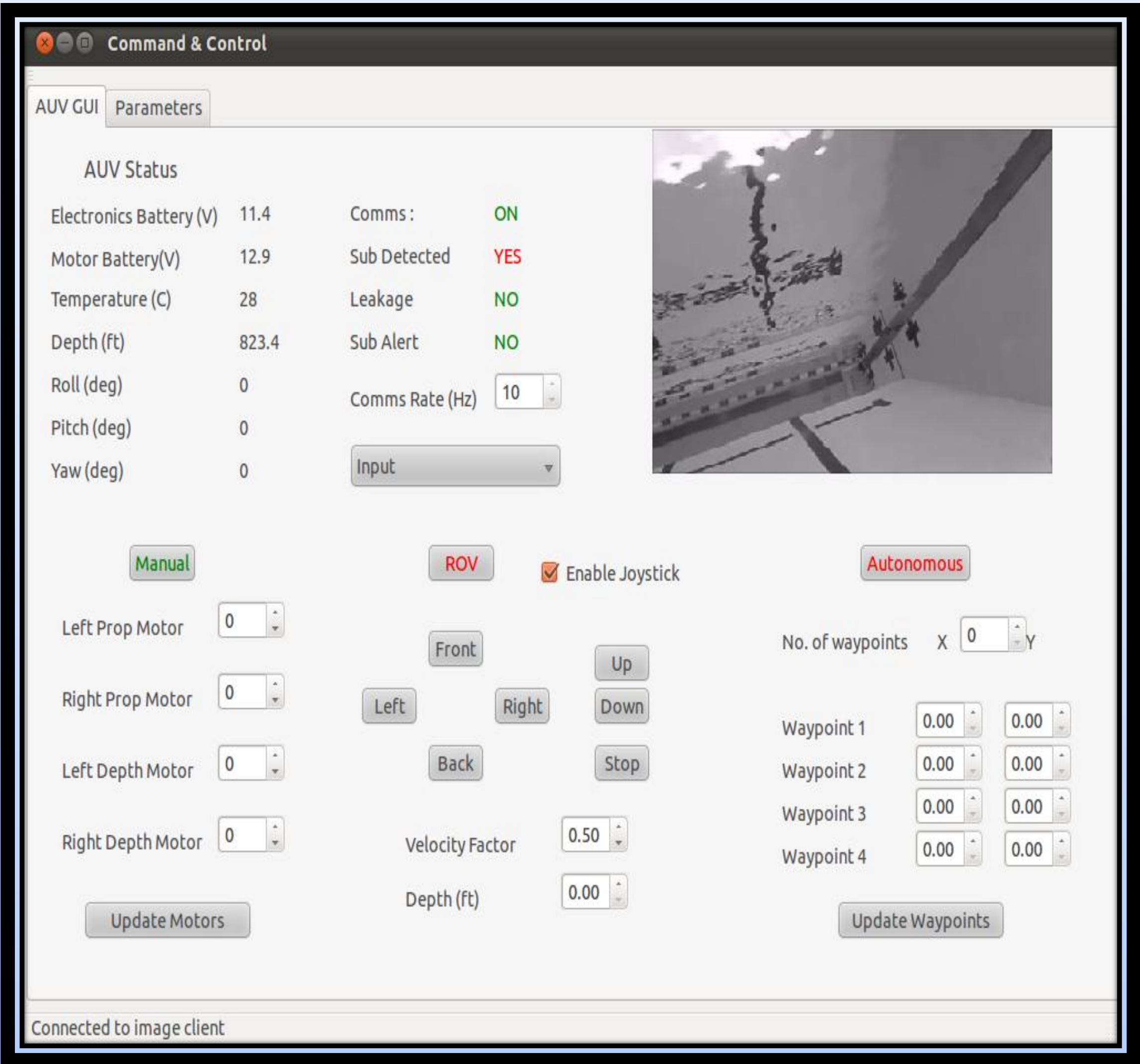
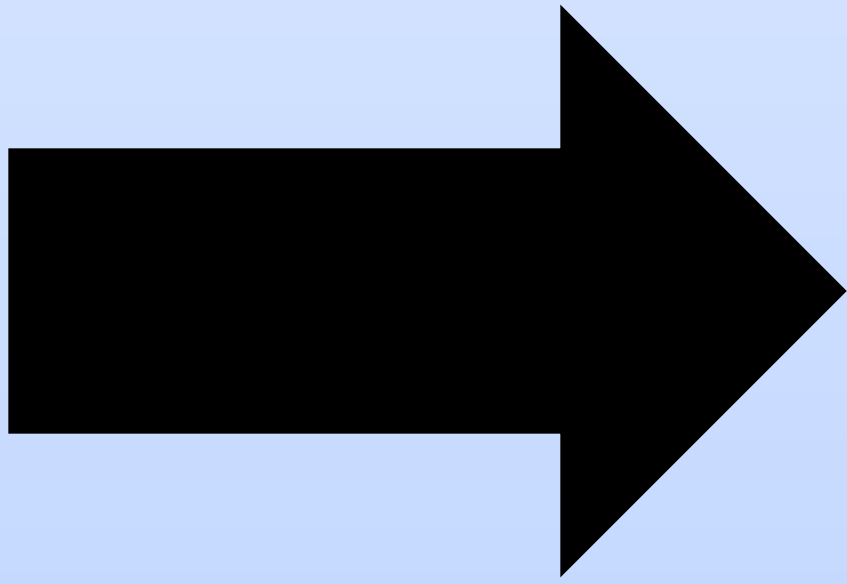
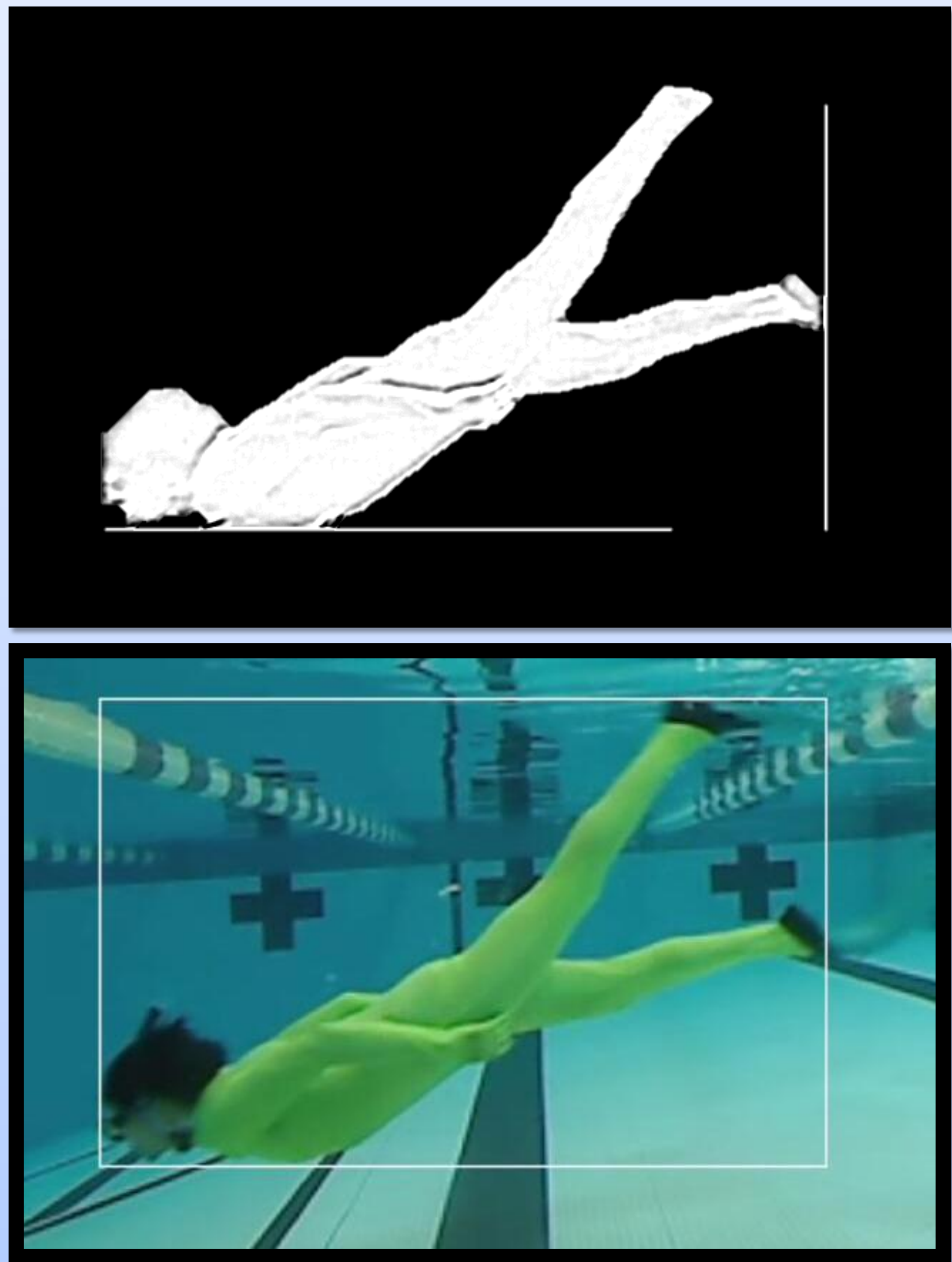
Camera

Wireless Router

Arduino and Power Distribution Board



Key Performance Parameters	
Dry weight	19 Kg
Maximum Operating Depth	4 m
Stationary Detection system range	7m
Detection system accuracy	90 %
Endurance	70 minutes
Max Speed	0,5 m/s



Codebook based Background Subtraction algorithm used to detect the target.

Ground Station launches submarine alert and the AUV goes into tracking mode.

Visual servoing is used to track the target submarine.