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Detection of Flaws in Ship Hull Using Underwater Remotely Operated Vehicle

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Abstract: *Fatigue leads to failure of ships and also fatigue is one of the major factors which can produce cracks in a ship. To maintain safety of ship structures, an optimum..inspection plan should be done. The robotics has become an important resource in recent years in the field of engineering. Earlier the ship inspection was carried out by humans. This paper explains how it could..be improved using ROV even though if it.is not completely autonomous for time being. Since the manual approach completely depends on the experience and..specialist knowledge. So, python programming image-based crack and hole detection is done as a replacement. This paper presents a review. of inspection of a ship hull using Remoted Operated Vehicle (ROV). Several power considerations..and designs are discussed and planned as per the requirement of ROV. The main purpose of this project is to detect crack and holes using.ROV at low cost, which is safe, portable, and also it is easy. to use. It uses camera for the visuals beneath the water for detection. An Arduino board is used as microcontroller a and Bluetooth module HC-05 to navigation of ROV to front, back, left, right and stop. A lithium battery of 12V is used for power supply and .converted to 5V while giving power supply to Arduino board. The remotely operated vehicle is constructed from PVC pipes which make them to float on the surface of the water. The underwater images captured..from the camera are processed through python..coding and the result..will be appeared on the system interface.*

Keywords: Arduino board, Bluetooth, battery.