Design of Aquatic Robo for Underwater Monitoring System

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Abstract- *This paper presents the design of a robotic fish that integrates an Android smart phone for debris monitoring. The smart phone based aquatic robot can accurately detect debris in the presence of various environments and detects the pollution in the underwater system to protect the endangered species from the harmful diffusion processes like chemical leakages it may also have dangerous impact on human health and sustainability of ecosystem and also measure the temperature , pH ,turbidity of underwater.*

Keywords- aquatic Robo, underwater, turbidity, Monitoring.

I. INTRODUCTION

Underwater system come across many threats from many various materials, industrial wastes and oil leakages from heavy ships. Due to this harmful leakages it cause serious impact on ecosystem and human beings.

Interruption like obstacles coming in the way it creates heavy traffic and it's viewed through image processing. The past two years have seen significant improvement in developing a robotic gliding vehicle for underwater sensing.

Large groupof underwater vehicle known as automatic underwater system that includes remotely operated underwater vehicle control and power from the surface by an operator by using remote control. If the vehicle needs high speed moving in the water streamline body is required.Different structures different size of underwater vehicle are developed

II. EXISTING SYSTEM

In the paper(1) we surveyed about embedded Bluetooth data acquisition system based on ARM for unmanned underwater vehicle. In this paper Bluetooth device connected to the ARM processor through a RS232 serial port with ARM processor central data acquisition system and controlling system that controls the Bluetooth device and acquires data from the different subsystem of underwater vehicle [1].

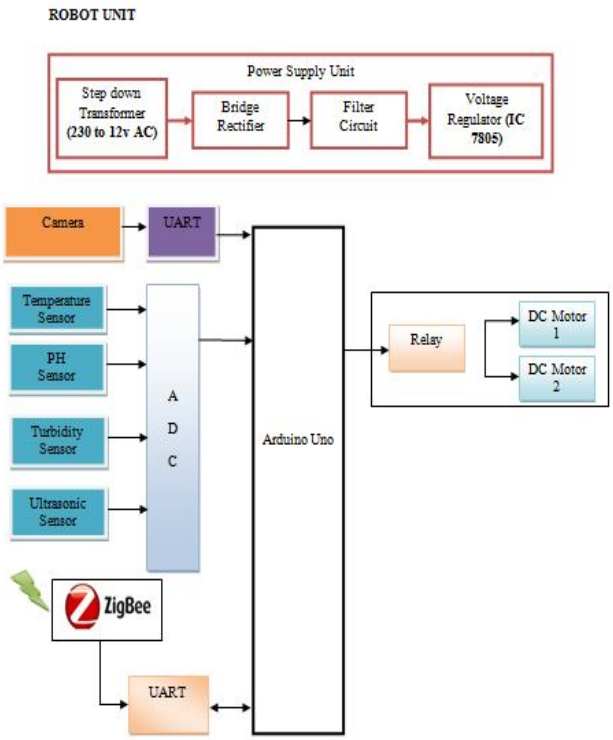
Bluetooth technology which is used in the existing system is short range wireless communication technology security level is weak compare to Wi-Fi and also send the relatively slow.

Yu Wang describes the smart phone based aquatic environment monitoring it has the features of debris detection .It consume high energy and complex structure [2].

Robotic sensor network for environment monitoring describes active tracking.It has facing a several challenges due to an Impact of waves it doesn't have a stable camera view for debris identification. It powered by small battery uses both aquatic robot and image processing on smart phone it acquires high energy consumption [3].

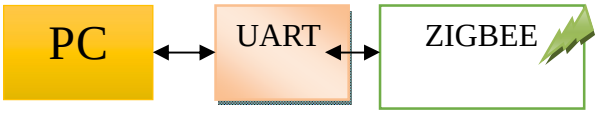
III. PROPOSED SYSTEM

Robotic section consisting of series of PH sensor, temperature sensor, turbiditysensor, ultrasonic sensor and camera. Ultrasonic sensor detects the obstacle and measure the distance without any damage. Camera is used to display the debris and scattered particles from aircraft



DC motor is used to rotate the underwater robot. The robotic section is impressed in underwater when the robot moves in forward, the right side of dc motor to be in ON. Now the robot in reverse direction the right side of the relay should be ON. The ardunio UNO is the most used board in the family of ardunio, a micro controller. UART is a serial port used to communicate between the ardunio port and camera or signee .Sensor cannot be directly connected to arguing. PH sensor is used to find the acid, base or neutral of underwater.PH of water is 7 used for drinking purpose. Temperature sensor is used to measure the temperature of underwater. Water proof temperature sensor (DS18B20) is used. Turbidity sensor is used to measure the water quality and to monitor precipitate formation or algae .signee is used to monitoring all the parameters and is used to retrieve the information in smart phone. Image processing is used to detect the debris and scattered particles from the aircraft

IV. MONITORING UNIT



ADVANTAGES:

Image processing is done to detect the debris. PH, temperature, turbidity of the water should be measured and maintained by using the respective sensors. Debris identification can be done very effectively in our project .zigbee is a wireless protocol can be used to communicate more than 100meters .zigbee is a acknowlgement based protocol .It will resend the message when no ack is received. We can retrieve the information related to underwater to smart phone using zigbee. Using ardunio it's more compact and reliable.

V. FUTURE ENHANCEMENT

In future we can implement all features using IOT (internet of things) that helps to access the information worldwide .we also planned to implement a more underwater vehicle to access the many information

VI. CONCLUSION

Parameters such as temperature,pH and turbidity of underwater can be monitored using zigbee

Image processing is used to viewed the debris and to detect the pollution in the underwater system and to protect the endangered species from the diffusion process like chemical leakage

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