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Radar Sonar System Using Arduino UNO

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ABSTRACT: Radar and sonar square measure sensors that square measure used widely within the military domain. analysis and development in these square measures are commonly meted out severally by totally different teams. whereas every device system has its own set of challenges and solutions, there square measure elementary similarities in their operative principles. this text examines and compares these similarities to produce pregnant insights into the natural process between microwave radar and Sonar.

Radar and sonar square measure device systems that use the propagation of waves to discover and localize targets. In radar, a transmitter with an Associate in Nursing generator is employed to come up with radio waves, and a waveguide links the transmitter to the antenna.

On the opposite hand, the received signals for an sonar undergo a pre-amplifier to form the signal (front-end conditioning) before being sent to the signal process unit.

KEYWORDS: Arduino UNO, Arduino IDE, Laptop, Ultrasonic Sensor ,servo motor

I.INTRODUCTION

Radar and asdic have seen in depth military use in their primary role of detection and distinguishing varied threats. each ar device systems that use the transmission and reception of come back signals to perform. measuring device systems operate victimisation radio waves primarily in air, whereas asdic systems operate victimisation sound waves primarily in water . Despite the distinction in medium, similarities within the principles of measuring device and asdic will oft lead to technological convergence. though measuring device and asdic operate underneath completely different environments and fight varied roles, they're closely connected thanks to elementary similarities in perform. Therefore, breakthroughs in one field will doubtless offer insights and cause the advancement of the opposite. this text aims to match the 2 systems so as to elicit significant similarities between the 2 technologies. waves to spot the vary, altitude, direction, or speed of each moving and glued objects like craft, ships, motorized vehicles, weather formations, and piece of ground and once rather than magnetic attraction waves, we tend to use inaudible waves, it's known as associate degree inaudible measuring device. the most elements in any inaudible measuring device ar the inaudible Sensors. inaudible sensors work on a principle like measuring device or asdic that evaluates attributes of a target by decoding the echoes from radio or sound waves. This project aims on the utilization of inaudible device by connected to the raspberry PI board and therefore the signal from the device any provided to the screen shaped on the portable computer to live the presence of any obstacle ahead of the device still as verify the vary and angle at that the obstacle is detected by the device.

II.OBJECTIVES

- It is use for various water based activites.
- Very accurate system.
- Use to identify objects.
- Not too expensive.
- It is use to determine depth of water.

III.LITERATURE REVIEW

The evolution and analysis efforts in radiolocation are staggeringly made and have vitally modified computing. Eventually, the researchers engaged in radiolocation to style and develop and improve security and user interfaces and are capable enough to fulfill the meant performance criteria desired within the completely different surroundings. microwave radar ranging|radiolocation|measuring instrument|measuring system|measuring device} is an object

detection system that uses magnetism. waves to spot the vary, altitude, direction, or speed of each moving and stuck object like craft, ships, motorized vehicle, weather formations, and pieces of ground and once rather than magnetism waves, we tend to use unhearable waves, it's known as Associate in Nursing unhearable radiolocation. the most elements in any unhearable radiolocation area unit the unhearable Sensors. unhearable sensors work on a principle kind of like radiolocation or echo sounder that evaluates attributes of a target by decoding the echoes from radio or sound waves. This project aims at the employment of an unhearable detector by connected to the Raspberry PI board and also the signal from the detector additional provided to the screen shaped on the laptop computer to live the presence of any obstacle before of the detector yet as confirming the vary and angle at that the obstacle is detected by the detector.

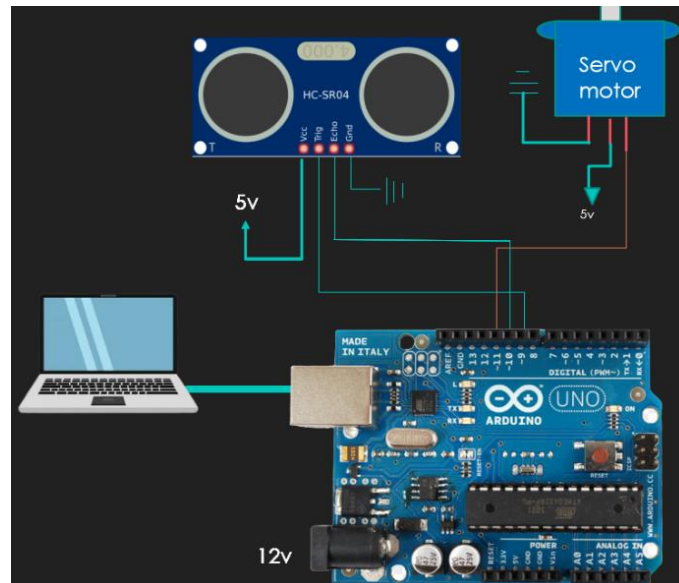


Figure 1: System Design

Hardware requirements

- Laptop
- Ultrasonic sensor
- Servo motor
- Jumper wires
- Uno arduino

Advantages:

- It is use for various water based activites.
- Very accurate system.
- Use to identify objects.
- Not too expensive.
- It is use to determine depth of water.

IV.MODEL

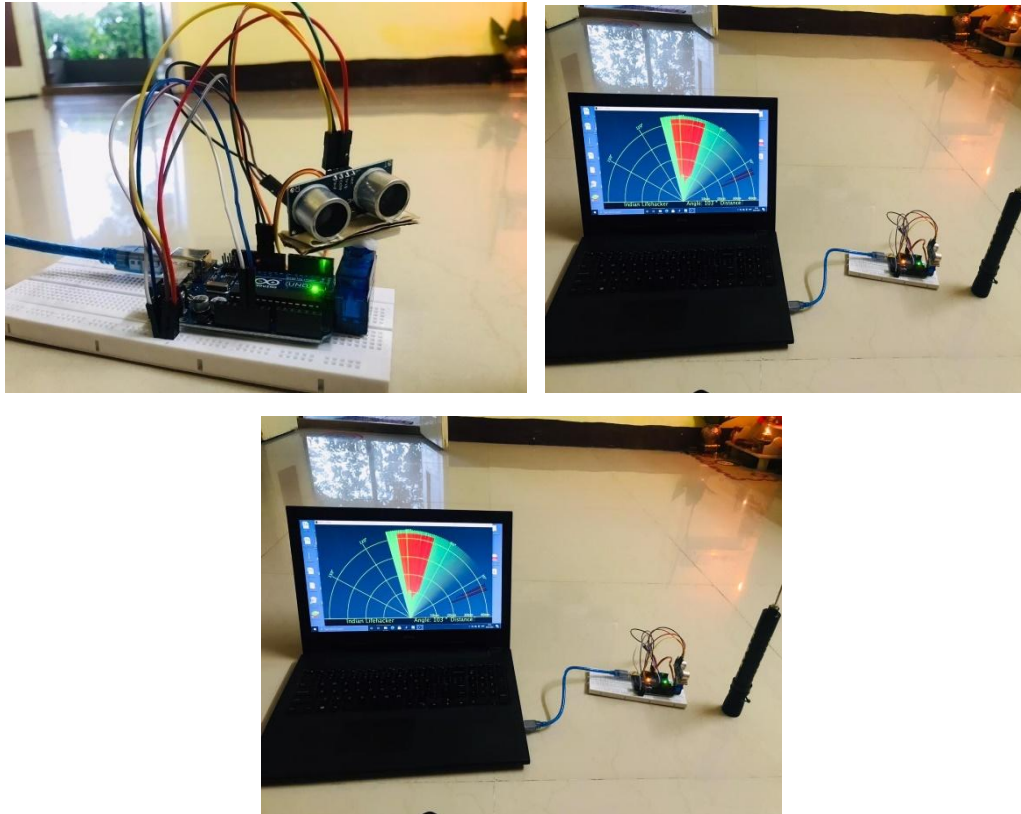


FIGURE 2

V.CONCLUSION & FUTURE SCOPE

The goal of this project is to develop and checks navigational instrument devices for succeeding use the part of this improvement is that the development of navigational instrument devices. This project deals with the Digital Signal process (DSP) for navigational instrument devices and a computer code implementation. The scope eventually is to explore a methodology and a computer code solutions for the subsequent navigational instrument applications in the medium.

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