PERI INSTITUTE OF TECHNOLOGY

Final Review

BE-ECE

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3rd Eye For The Blind

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ABSTRACT

- Third eye for people who are blind is an innovation which helps the blind people to navigate with speed and confidence by detecting the nearby obstacles using the help of ultrasonic waves and notify them with buzzer sound or vibration. They only need to wear this device as a band or cloth.

- According to WHO 39 million people are estimated as blind worldwide .They are suffering a lot of hardship in their daily life.

- Now a days there are so many instruments and smart devices for visually impaired peoples for navigation but most of them have certain problems for carrying and the major drawbacks is those need a lot of training to use.

Base Paper

M. Narendran, Sarmisthapadhi, Aashita Tiwari ,National Journal of Multidisciplinary Research and Development Impact Factor**. "Third eye for the blind using Arduino and ultrasonic sensors"** www.nationaljournals.com. ISSN: 2455-9040, RJIF 5.22 ,Volume 3; Issue 1; January 2018; Page No. 752-756

Literature Survey

S.NO	Author	Title	Year	Proposed Idea
1.	Samartha Koharwal, Samer Bani Awwad, Aparna Vyakaranam	Navigation System for Blind - Third Eye	2019	In order to support blind and visually impaired people's mobility indoor and outdoor, this work proposes a simple electronic guidance embedded vision system which is configurable and efficient.
2.	M.Narendran, SarmisthaPadhi, Aashita Tiwari	Third eye for the blind using arduino and ultrasonic sensors	2018	This project proposed the design and architecture of a new concept of Arduino based Virtual Eye for the blind people
3.	Mohammed H.Rana and Sayemil	Smart Walking Stick	2017	It is based on ping sensor for detecting obstacle, wet electrode, vibration and buzzer
4.	Mohan M.S.Madulika	Electronic Travelling aid For blind navigation	2016	It is based on arm7 controller that used ultrasonic technology for detecting the obstacle
5.	Pooja Sharma, Mrs. Shimi S. L	Design and Development of Virtual Eye for the Blind	2015	In order to overcome the difficulties in the existing method and to provide the cost effective and user friendly system for blind navigation

Existing System

- It Consists of devices or support like white cane for helping them to detect the obstacles and travel to places, pet dogs, smart devices .

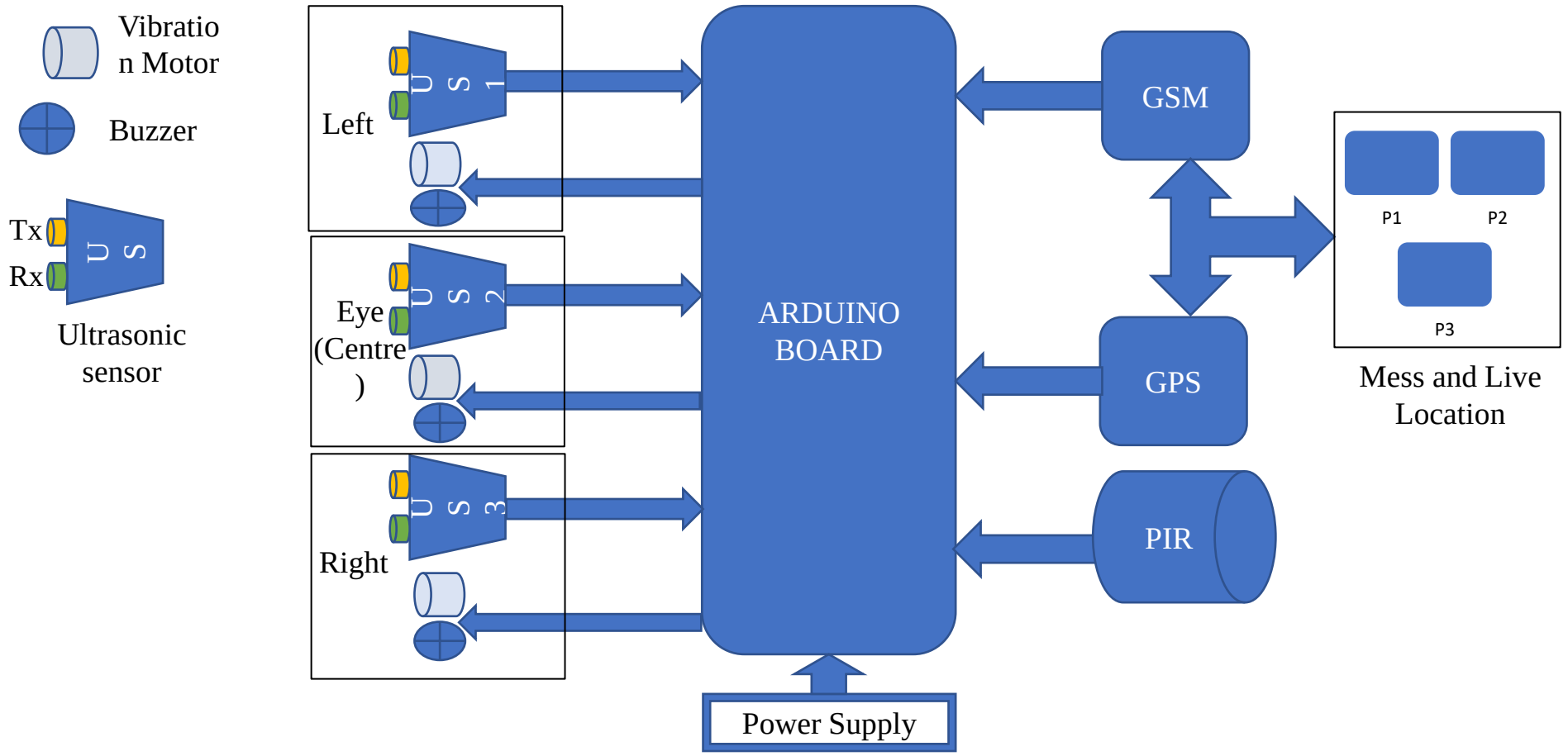
Limitations :

- White cane, it may easily break or crack
- The white cane may get stuck at the pavement cracks of the different objects. Whereas the pet dogs cost is huge and need a lot of training.

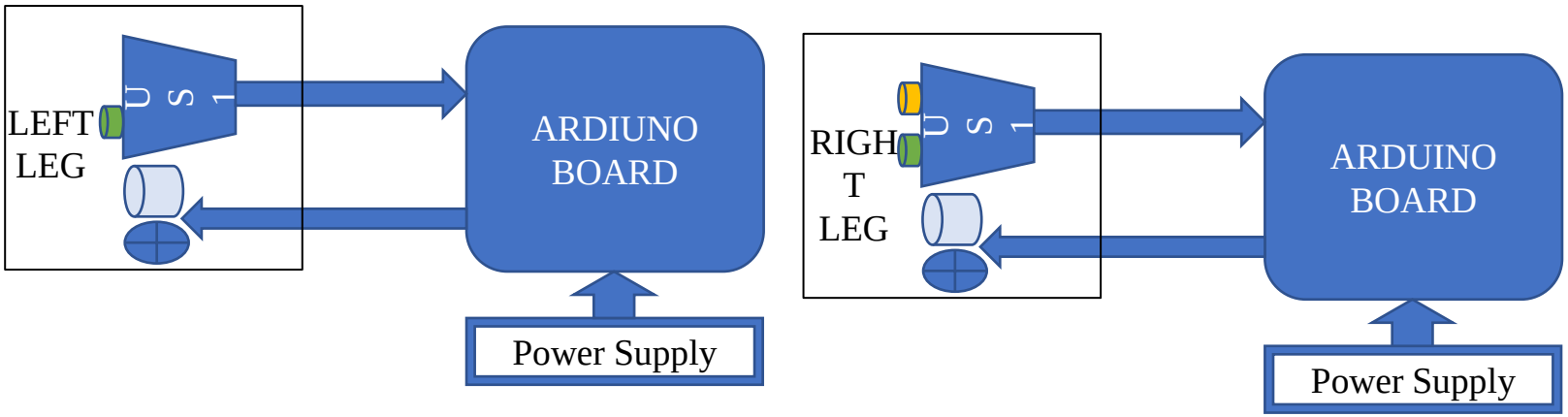
Proposed System

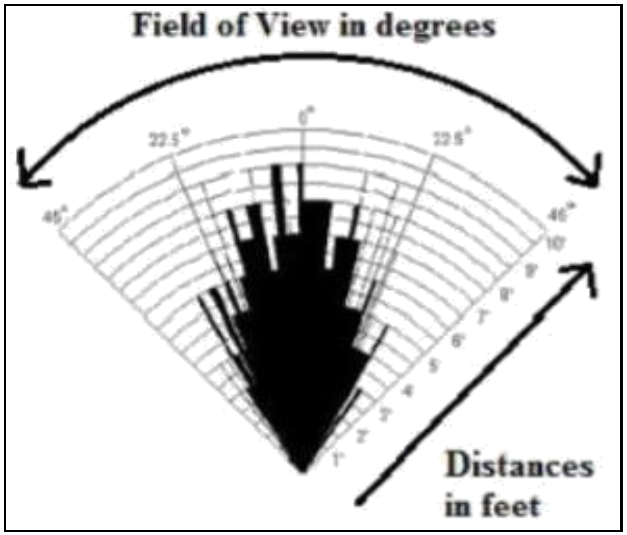
- The design is based on a special wearable device based on the Arduino board which can be wore like a cloth for blinds. This device is equipped with five ultrasonic sensors, consisting five modules which are connected to the different parts of the body. Among them, two for both the shoulders, another two for both the knees, and one for the hand.
- With the use of these five ultrasonic sensors , the blind can detect the objects in a five dimensional view around them and can easily travel anywhere by detecting the obstacles. When the ultrasonic sensor detects obstacle the device will notify the user through vibrations and sound beeps.
- This device will help the blind to navigate without holding a stick which is a bit annoying for them.

Block Diagram



Block Diagram





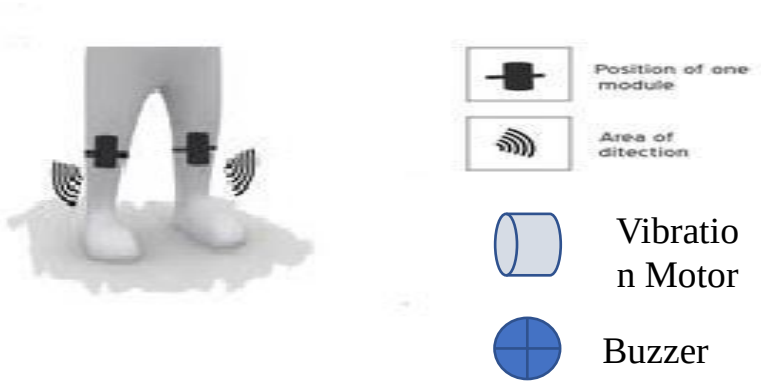
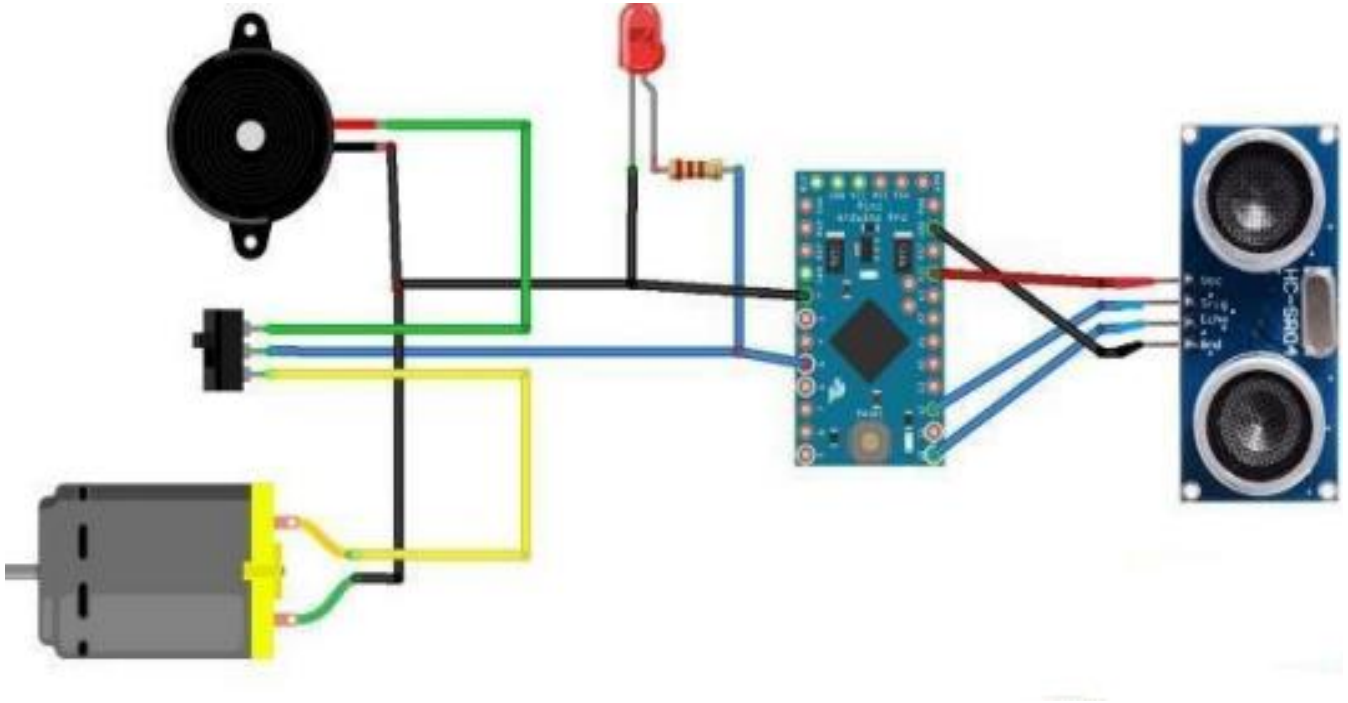


Fig 5: Angle of field of detection

BASIC CIRCUIT DIAGRAM



PROJECT FLOW

Zeroth Review:-

Understanding and Analysation of Project

First Review:-

Literature survey

Basic Working of Components and Their Behaviour

Project design

Second Review:-

Basic Implementation of Project

Basic Work Model

PROJECT FLOW

Third Review:-

Report Work

Work Model

Final Review:-

Report Submission

Complete Work Model

REQUIREMENTS

HARDWARE:

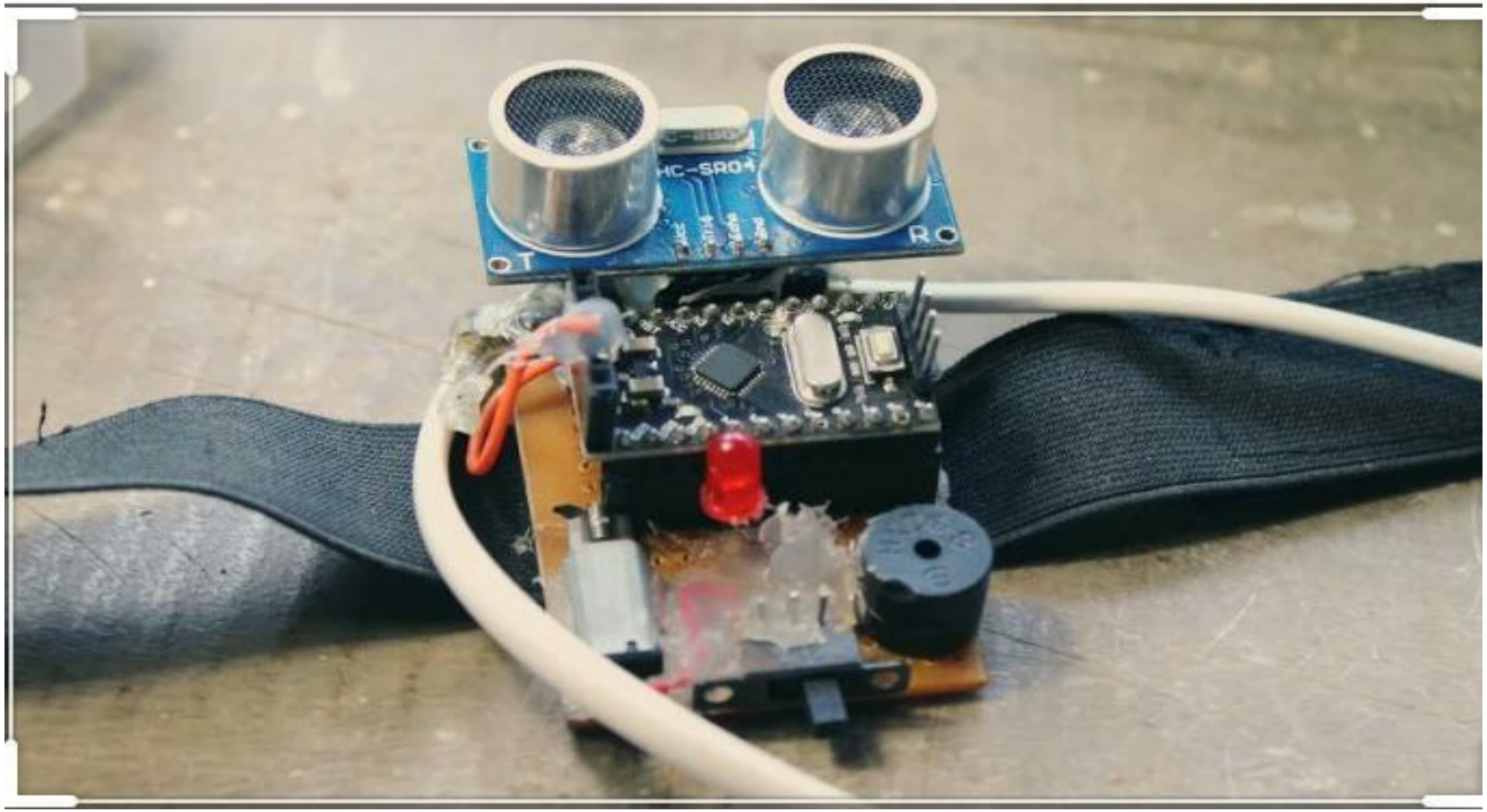
1. 3x Arduino Board
2. 5x Ultrasonic Sensors
3. 1x PIR Sensor
4. 1xGPS
5. 1xGSM
6. 5x Buzzer
7. 5x Vibration Motor
8. LEDs
9. Wires
10. Some Required components

SOFTWARE:

1. Arduino Software

OUTPUT

OUTPUT



Result

- After using this they feel more secure and comfortable. Before using this device, They need someone’s help to move from one place to another. But nowadays with the help of this device they can move from one place to another without anyone’s help. It guide me to move in correct path.
- It has one of the best features, which GPS is connected with me. If they lost their direction, with the help of GPS the message will send to their neighbour. By this they can track easily without any struggles. When compared to blind stick and trained dogs, this is the best option nowadays. This device is easy to control, less cost.

Reference Paper

- Pooja Sharma, Mrs.Shimi S.L and Dr. S Chatterji, International Journal of Scientific Research Engineering & Technology (IJSRET), " **DESIGN OF MICROCONTROLLER BASED VIRTUAL EYE FOR THE BLIND** " , Volume 3, Issue 8 November 2014, ISSN 2278 – 0882 .
- Dr. S.Deepa, T.S.Maheshwari, G.JancyRani, A. Jayasri,International Journal of Advanced Research in Science, Engineering and Technology **"Third Eye Navigator for Visually Challenged".** Vol. 5, Issue 4 , April 2018.
- Samartha Koharwal, Samer Bani Awwad, Aparna Vyakaranam, International Journal of Innovative Technology and Exploring Engineering (IJITEE). "**Navigation System for Blind - Third Eye**" Volume-8, Issue-5 March 2019, ISSN: 2278-3075**.**

References

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3. https://store.arduino.cc/usa/arduino-uno-rev3
4. https://www.robotechmaker.com/2016/11/third-eye-for-blind.html
5. https://create.arduino.cc/projecthub/muhammedazhar/third-eye-for-the-blind-8c246d

Thank You