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REVIEW ON SMART STICK FOR BLIND PEOPLE

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Abstract: Visually impaired persons find themselves challenging to travel out independently. Millions of visually impaired or blind people during this world are always in need of helping hands. While walking into an unfamiliar place, Person has to completely depend on other people to reach destination, this restricts their mobility. Hence, we are developing a smart walking stick which will help them to know about their surroundings and also guide them during travelling. Blind stick is an innovative stick designed for visually disabled people for improved navigation. The blind stick is integrated with ultrasonic, IR sensors in conjunction with motors. On sensing obstacles, If the obstacle is close enough then buzzer and vibrator motor get activated. The system has another advanced feature integrated to assist the blind man to seek out their required location. The main objective of this project is to style a sensible walking stick that alerts visually impaired people over obstacles ahead could help them in walking with less accident. It outlines a much better navigational tool for the visually impaired. The Smart Stick will help the blind man by providing more convenient means of life.

Index Terms **– Mobility, Navigation, Obstacles, Sensors, Motors, Smart Walking Stick**

I. INTRODUCTION

Visually impaired individual have little or no opportunity of blind people to execute daily task and also limits their interaction with the surrounding world consequently affecting quality of life .The mobility of blind people completely depends on their family and friends and limits their freedom. It becomes difficult for them to detect the obstacles in their path while moving and finding the lost normal stick. Over the past decades many solutions have been proposed in favor of blind persons but still have few limitations in implementing them. Based on new technology and previous researches, our proposal has been implemented.
The main intention of this project is to design a smart walking stick especially people with complete loss of vision as it alerts visually impaired people over obstacles and water in front that could help them in walking with less accident and making their navigation around easily without seeking the help from others .

It outlines a far better navigation tool for the visually impaired people. It consists of a simple walking stick equipped with sensors to give information about the environment surrounding them and integrated GPS technology that is recorded with pre-programmed locations to determine the optimal route to be taken to reach their destination. The user can choose his destination from the set of locations stored in the memory that will lead the user in the correct direction.

This Smart Stick consists of Ultrasonic Sensors that can sense both the distant and nearer objects or obstacles and a RF remote to locate this smart stick and this complete setup is controlled by Arduino UNO .Visually impaired persons will receive all this feedbacks with the help of a buzzer that will automatically get activated and will start producing vibration when the sensors will sense the obstacles .Apart from the obstacle detection this smart stick using GPS can also locate the position of the person to their loving ones and communicate with them .The proposed solution is ideal as it is user friendly ,easy to use and handle, light weight

II. LITERATURE SURVEY

The reference paper by the authors Arnesh Sen , Kaustaubh Sen and Jayoti Das –from "Institute of Electrical and Electronics Engineers" Ultrasonic Blind Stick for completely Blind people To avoid any kind of Obstacles of 2018 proposes a smart stick that is intended and executed to aid blind persons so that they can walk independently without much difficulty knee above obstacle detection and avoidance system is implemented by using and extra ultrasonic sensor on the highest of the stick with turn an alarm and vibration ON when there's a person, obstacle or wall at a distance of fifty cm ahead to avoid an accident and thus helping the person to maneuver independently. This proposed system apparatus a new technique for supporting blind people by means of the ultrasonic sensors and a global positioning system modem. The system will make available the obstacles hindrance feature and avoiding vehicle dash to the blind people.

Another learning on the paper by Manisha Bansode, Shivani Jadhav and Angela Kashyap from "International Conference on Advanced Computing and Communication" of 2020 analyzes the troubles of blind people who face many difficulties to interact with their nearby surrounding. The aim of this paper is to supply a tool which can help blind people to navigate also as sense the obstacles. We decide to propose a working model which is Walking persist with in-built ultrasonic sensor with a microcontroller system. The Android application also shows the situation of the blind man to his loved one. In this way, blind man is guided to maneuver along the trail by his loved one via the Android Mobile Application. This paper aims to style a man-made navigating system with adjustable sensitivity with the assistance of ultrasonic proximity sensor and a GPS module to help these blind men. It also consists an Android Application that guides the user and his family about the current location.

III. CONCLUSION

This proposed idea of smart stick for blind people is a sincere attempt to upgrade the lifestyle of visually impaired by providing independent mobility to the blind person with the help of smart stick and navigation system that helps in locating the exact location and in constant contact of their loved ones setting them free into their surroundings. This project can further be developed by adding more sensors and technology to increase the reliability of the smart stick.

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