

Implementation of Smart Stick for Blind People

**Dr. P. N. Yerkewar¹, Ms. Diksha Vaidya², Ms. Nikita Bandhekar³,
Ms. Ragini Jadhao⁴, Ms. Vaishnavi Nile⁵**

Guide, Department of Electronics & Communication Engineering¹
UG Student, Department of Electronics & Communication Engineering^{2,3,4,5}
Priyadarshini Bhagwati College of Engineering, Nagpur, Maharashtra, India

Abstract: *Visually disabled people have to face many challenges in their daily life and problem gets worst when there is an obstacle in their way. People find difficulties detecting obstacles in front of them, during walking on the street, which makes it harmful, so the stick is basically designed for blind people for easy navigation. In this project we propose a solution, we indicate clearly in a smart stick with ultrasonic sensor to detect stairs or pair of ultrasonic sensor to detect any other obstacles in front of the user, within a range of 1-1.5 meters. In addition, moisture sensor is placed at the middle of the stick for detecting water and puddles mostly in rainy season. When any obstacle is detected then buzzer beeps. This proposed system uses the microcontroller Arduino nano embedded system, buzzer, GSM, GPS, encoder IC, decoder IC, pcb. The stick is able to detect all obstacles in the range 10-15 meters during 39 ms. the visually impaired people can walk independently in unfamiliar environment. In this project we are going to use GSM module which is interfaced with GPS device therefore the care taker or relative receive the intimation message with location at their mobile phone in case of any emergency. The smart blind stick is of low cost, fast response, easy to design light weight.*

Keywords: Ultrasonic sensor, Water sensor, Visually impaired, Blind Navigation, GSM.

REFERENCES

- [1]. World Health Organization, "Visual Disability and Blindness," Fact Sheet N "282", Oct 2014.
- [2]. Official Website of World Health Organization www.who.com
- [3]. R. Radhika, P.G. Pai, S. Rakshitha and R. Srinath implementation of smart stick for obstacle detection and navigation.
- [4]. Benjamin, J. M. Ali, N. A. Schepis, A. F., 1973, "A Laser Cane for the blind ." Proceedings of the San Diego Biomedical Symposium, vol. 12, pp.53-57.
- [5]. S Romadhon, A K Husein, "Smart stick for blind using Arduino", International conference on science and technology