

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM-590010



A REPORT ON PROJECT WORK

**DESIGN AND DEVELOPMENT OF NAVIGATION SYSTEM FOR BLIND
IN PUBLIC TRANSPORTATION & BLIND STICK**

(Sponsored by K.S.C.S.T)

Submitted in partial fulfillment of the requirements for the award of the degree of

**BACHELOR OF ENGINEERING
IN
BIOMEDICAL ENGINEERING**

Dr.B.T.ACHYUTHA

B.Sc., B.E., M.Tech., Ph.D., FIE, MISTE

PRINCIPAL

Dr. MALLIKARJUN S.HOLI

M.Tech., Ph.D., MISTE.

HEAD OF THE DEPARTMENT

UNDER GUIDANCE OF

Mr. VAGEESH V. KANTLI

M.S., (Ph.D.),MISTE.

Ms. RENUKA H.

B.E.

PROJECT ASSOCIATES

CHAITRA C. HEGDE

SHRUTHI .B.S.

JYOTHI C.L

TRUPTI GOKAKKAR

4BD06BM005

4BD06BM020

4BD07BM401

4BD07BM405



DEPARTMENT OF BIOMEDICAL ENGINEERING

**BAPUJI INSTITUTE OF ENGINEERING &TECHNOLOGY,
DAVANGERE- 577004, KARNATAKA, INDIA.**

ABSTRACT

Travelling by bus for many blind and visually impaired passengers can be very difficult, especially at request stops, which are almost impossible for passengers who are blind or visually impaired to use independently. In some cases there have been reports of such passengers walking to compulsory stop bus stops, just so that they may be sure of the bus stopping and having the opportunity to determine from the driver or other passengers if this is the bus service they require. Improvements in technology are; however, beginning to make things easier for blind and visually impaired bus passengers.

The proposed Navigation system will be useful for blind people as it assists in identifying of bus stop names and bus names. The basic working of such a system is based on radio frequency identification (RFID) technique and a suitable interfacing of microcontroller. The microcontroller is programmed in such a way that the output drives the voice processor unit. The voice processor unit is so designed that the pre-recorded voice data regarding the particular bus name and routes is announced through the audio amplifier unit to a headphone system. So helps the blind person to get inside the bus.

Presently, blind people use a white stick as a tool for directing them when they move or walk. Although, the white stick is useful, it cannot give a high guarantee that it can protect blind people away from all level of obstacles. Many researchers have been interested in developing electronic devices to protect blind people away from obstacles with a higher guarantee. This paper introduces an obstacles avoidance alternative by using an electronic stick that serves as a tool for blind people in walking. It employs an infrared sensor for detecting obstacles along the pathway. With all level of obstacles, the infrared stick enables to detect all type of materials available in the course such as concrete, wood, metal, glass, and human being. The result also shows that the stick detects obstacles in range of 80 cm which is the same as the length of white stick. The stick is designed to be small and light, so that blind people can carry it comfortably.

The blind stick provides the blind person with extra safety by detecting the obstacles on road with the technique of sending and receiving infrared (IR) rays. This provides security against any obstacles.