Navigational Device for Visually Impaired People

The technology is a navigational aid system for visually impaired person and has been developed in three modules. These modules basically incorporate the Ultrasonic, RFID (Radio frequency Identification), and GPS(Global Positioning System) technologies. This aid system will help in the day to day navigation of blind and will ease their movement.

Module I

Module 1 is developed with ultrasonic detection is based on the principle of echo system. The ultrasonic signals are sent and received by using a ultrasonic transmitter and receiver (40KHz), and the distance of obstacle is calibrated in feets and acknowledged to the blind based on the time lapse occurred between the sending and receiving operation by means of beeps and vibrations which is proportional to the distance calculated.

Module II

Module 2 is developed for navigating the blind from an unknown region giving him the information about the locations of important places of that region in the form of audio message. This incorporates the use of an RFID transmitter which continuously emits the radio frequency is placed on the different important places having a unique identity code. The RFID receiver is mounted on the stick of blind person along with the ARM processor. As soon as the blind reaches in the vicinity of any transmitter, the receiver will identify its code & ARM processor will play the corresponding audio message stored for that particular code. This message will contain the information about the name of that place along with the important locations around that place.

Module III

Module 2 is developed and incorporate with GPS Antenna (or PDA) attached to the stick and a GPS transmitter-receiver pair. The GPS toolkit to be installed on a pc (or PDA) consists of a program that stores a database of places to be visited regularly. The values in this database are compared with real time obtained from a live GPS connection to enable path finding. The directions are issued to the user by means of voice commands.

The motive behind development of this stick is to ensure safety and independence of visually impaired people in public places as it efficiently detects obstacles and also navigates him to reach his predefined destination.

The stick will incorporate ultrasonic & RFID kit when used for any building. But if it is to be used in open space like roads, large campuses then it will incorporate all the three modules ultrasonic, RFID & GPS.

For further information, please contact

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