Improve Vision of Travel System for Blind People using Bluetooth Module or Zigbee

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Abstract--- This paper intends to solve the problems of visually impaired persons for travelling in bus. Degradation of the visual system can lead to dramatic reduction of the mobility. So a visually impaired person faces many difficulties in their day to day life. One big challenge for them is to transport from one place to another. So we are making a device which makes travelling easier for them. It will help them to get information such as bus timings, routes and stations. Nowadays means the technology world which is day by day progressing fast has contributed many special devices for visually impaired person. So our system is gift for them.

Keywords: Bluetooth module (Bluesmirf); Zigbee; Bus; VIPs.

I. INTRODUCTION

According to a recent survey, there are more than 15 million *blind people in India*. Hence we make system which help to visually impaired person (V.I.P) in travelling and by using this system their travelling become comfortable like ordinary people. The visually impaired person will just have to enter his/her bus number with the help of keypad (here we have assumed that he/she already knows the bus number) which is repeated through speaker. With the help of Bluetooth module or Zigbee, the communication takes place which will communicate with centralization where the travelling information is already stored and the required information is given back to the visually impaired person through speaker so that their travel becomes easier. While at the same time the driver of the bus will also get the information that a visually impaired person is going to travel on that particular bus so he will be aware of it. The buses will also consist of a system which will continuously inform the next station and present station. By using this system the normal person will also have an advantage of knowing the present station of the bus.

II. DESCRIPTION

Bluetooth module - Bluetooth modules has a Bluetooth transceiver on it, meaning they're capable of both sending and receiving data. They're perfect for directly replacing a wired asynchronous serial interface. Bluetooth devices can be up to 100 meters away from each other without connecting wire. These modules are very easy to use that is the benefit of this module. There's no messing with Bluetooth protocols or the stack, just send data over a serial interface, and it's piped through to whatever Bluetooth module to which it's connected. Bluesmirf device is use for interfacing with microcontroller in Bluetooth module. ZigBee - ZigBee is a specification for a suite of high level communication protocols used to create personal area networks built from small, low-power digital radios. ZigBee is based on an IEEE 802.15 standard. Though low-powered, ZigBee devices can transmit data over long distances by passing data through intermediate devices to reach more distant ones, creating a mesh network. ZigBee specification is intended to be simpler and less expensive than other WPANs, such as Bluetooth or Wi-Fi.

The block diagram of system is shown in figure1.

The centralized unit uses wireless communication by which it tracks the VIPs and gets information about their current location and the bus they want to take.
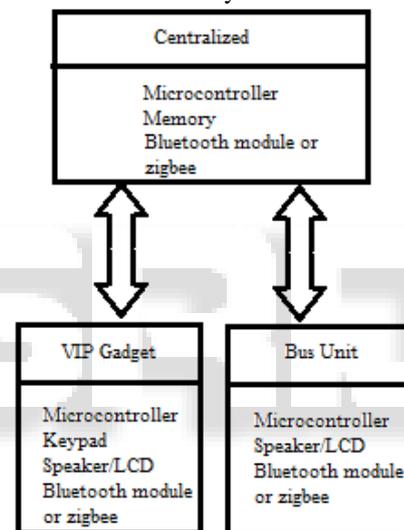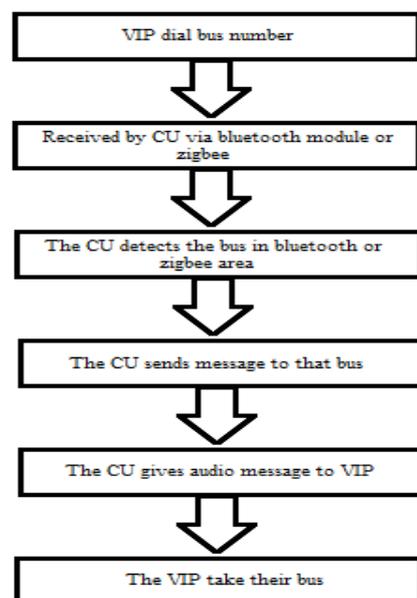

Fig. 1:

Fig. 2:

Figure 2 described the steps that the VIPs will do to find the bus they required. First of all, the visually impaired person (V.I.P) dials the bus number which is already known by VIP with help of keypad. The dial number is automatically removed in few seconds from keypad. This information is given to centralized unit (CU) via Bluetooth module or Zigbee. One type of system is present in this bus which announced about the present station as well as upcoming station via loudspeaker. This system is also useful for ordinary people.

III. EXPECTED OUTCOME

The blind people should be get information like bus timing, route for particular bus by our device to reach at his/her destination station.

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