

BUS ROUTE IDENTIFICATION USING IBEAICON

Vrushali A. Dighe

Department of Computer Engineering
Sanghavi College of Engineering Nashik, India

Yogita G.Ghuge

Department of Computer Engineering
Sanghavi College of Engineering Nashik, India

Kausar M.Shaikh

Department of Computer
Engineering
Sanghavi College of Engineering
Nashik, India

Damini C.Deshmukh

Department of Computer
Engineering
Sanghavi College of Engineering
Nashik, India

Prof. Bajirao Shirole

Department of Computer Engineering
Sanghavi College of Engineering
Nashik, India

Abstract: *The blind community depends on sighted people for a significant amount of information and assistance. This system, explored the ability of iBeacon technology to assist blind people while navigating indoors. The proposed system presents the iBeacon interaction system, based on mobile technology and aimed at enhancing visually-impaired and blind people's capabilities in visual scene understanding and Bus route while are outdoor. The system components are the Android app for mobile devices which is use to hear audio of route of bus and IBeacon device which will give messages to the app. Its interface is optimized for the perceptual characteristics of its users. Moreover, the iBeacon tags placed to bus at points of interest. We concluded that iBeacons have great potential as an assistive tool for blind people.*

Keywords: *ibeacon, DAB, Smart Phone.*

I. INTRODUCTION

Of the 7 billion people alive today, an estimated 285 million have some form of visual impairment that cannot be corrected with glasses or contact lenses (Pascolini Mariotti 2011). Because visual impairment can range from a generally reduced visual acuity (blurriness of vision) to total blindness, each visually impaired individual faces a unique set of challenges in his or her daily life. There are numerous organizations worldwide that dedicate themselves to creating a world in which blind individuals can lead a fully uninhibited life. The goal of this system is to ensure that blind people have the same opportunities as their sighted peers in every aspect of life. One way that DAB works to achieve this goal is through investigating technologies that provide accommodations to people with severe visual impairments. DAB (Digital Audio Broadcasting) has been considering implementing beacon technology in key locations within the city of Copenhagen. A beacon is a small device that wirelessly transmits a unique identification number via Bluetooth to users' devices in the vicinity. These devices utilize an application to follow that number to a specific section of an online library of information and present its findings in an accessible format (What is iBeacon?, n.d.). Beacons can be used to provide information such

as the location of a particular shop in a shopping mall or train schedules in a busy station, as well as other kinds of information that blind people cannot gather on their own. A beacon application can also prompt the user to perform certain actions like choosing between a number of options or posting a check-in on a social media site. To take advantage of this technology, users can simply download an app to their Bluetooth-enabled smartphone. Beacons can be compatible with both iPhone and Android devices. This project will focus specifically on iBeacons beacons designed to work with android mobile devices, which are popular among blind people because of their extensive accessibility features.

II. LITRATURE SURVEY

1. An Assistive Mobile System Supporting Blind and Visual Impaired People when Are Outdoor paper published by T. Valls Mataro, F. Masulli, S. Rovetta, A. Cabri, C. Traverso, E. Capris, S. Torretta present the TARSIOUS system, based on mobile technology and aimed at enhancing visually impaired and blind people's capabilities in visual scene understanding and geolocation while are outdoor. The system components are the TARSIOUS app for mobile devices, a web server, and the Remote Assistance Center. Its interface is optimized for the perceptual characteristics of its users. Moreover, the TARSIOUS navigation sub-system not only leverages the GPS system, but also Bluetooth LE/iBeacon tags placed along the streets at points of interest and dangerous paths and areas. Overall, visual impairment worldwide has decreased since 1990s, despite an ageing global elderly population. This decrease is mainly the result of a reduction in visual impairment from infectious diseases through: (a) overall socioeconomic development; (b) concerted public health action; (c) increased availability of eye care services; (d) awareness of the general population about solutions to the problems related to visual impairment (surgery, refraction devices, etc.). Nevertheless, the worldwide direct and indirect costs of visual impairment are growing.
2. Novel Method using Beacon and Smart Phone for Visually Impaired/Blind People, proposed by Ayad E. Korial, Mohammed N. Abdullah that - presents novel structure for visually impaired/blind people using beacon and smart phone. The proposed structure is consisted of three parts. In the first part esp8266 module due to ultra-low power consumption, in the second part configurator application to configure these beacon and last part is mobile application to detect these beacons. The aim is to help visually impaired/blind people to knowledge the environment in which they live by. Three tests applied in real environment. The results show good performance for the suggested scheme help the visually impaired/blind people reach the desired devices location successfully without error. In conclusion, beacon and smart phone were a valid and reliable method to help the visually impaired/blind people to know the location of devices that are nearest from him in indoor environment. One of many supports that is urgent is the guarantee of mobility for blind people. There has been many efforts but even now, it is not easy for blind people to independently move. Sentient computing is the proposition that applications can be made more responsive and useful by observing and reacting to the physical world. It is particularly attractive in a world of mobile users and ubiquitous computers. Blind and visually impaired people have different important daily needs including navigation. Navigation and way finding is crucial for the blind population, as for any other. Visually impaired people in new environments may feel totally disoriented or isolated. These people can easily end up in dangerous and confusing situations as they move in unknown places. Visually impaired people rely on different tools and skills to navigate. They usually rely on their white canes, seeing-eyedogs and other skills acquired over time to aid their navigation. Visually impaired people, that are able to perceive sounds, tend to learn how to identify audible landmarks. In general, people supplement their loss of sight by becoming better with other senses even smell.

OBJECTIVE

- To assist blind people while navigating outdoors.
- To enhance visually-impaired and blind people's capabilities in visual scene to understand the bus route while are outdoor.

MOTIVATION

The system will provides visual scene to understand and bus route while are outdoor to the blind people. The android app will read in vocal form the mes- sages, which will be received by the beacon device continuously.

PROBLEM STATEMENT

The system will ensure that blind people have the same opportunities as their sighted people in every aspect of life. The system will have, blind people’s capabilities in visual scene to understand and bus route while are outdoor.

III. PROPOSED SYSTEM

A. Architectural design

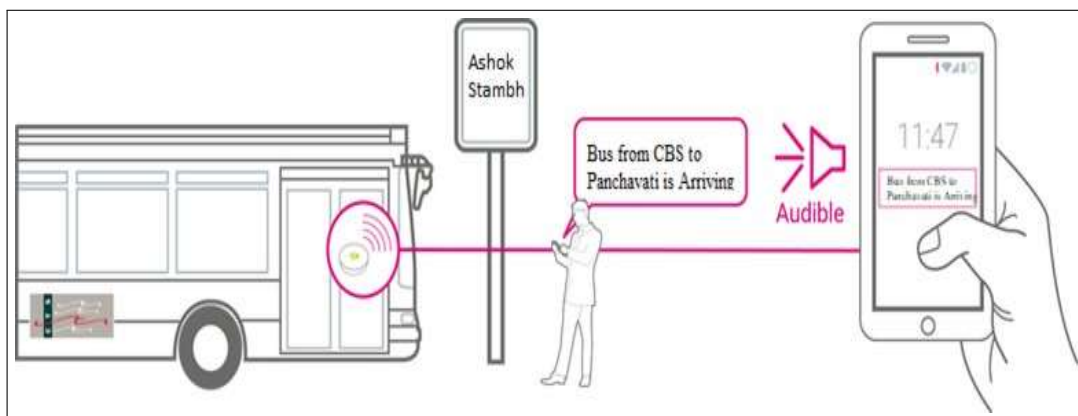


Fig. 1 Architecture diagram

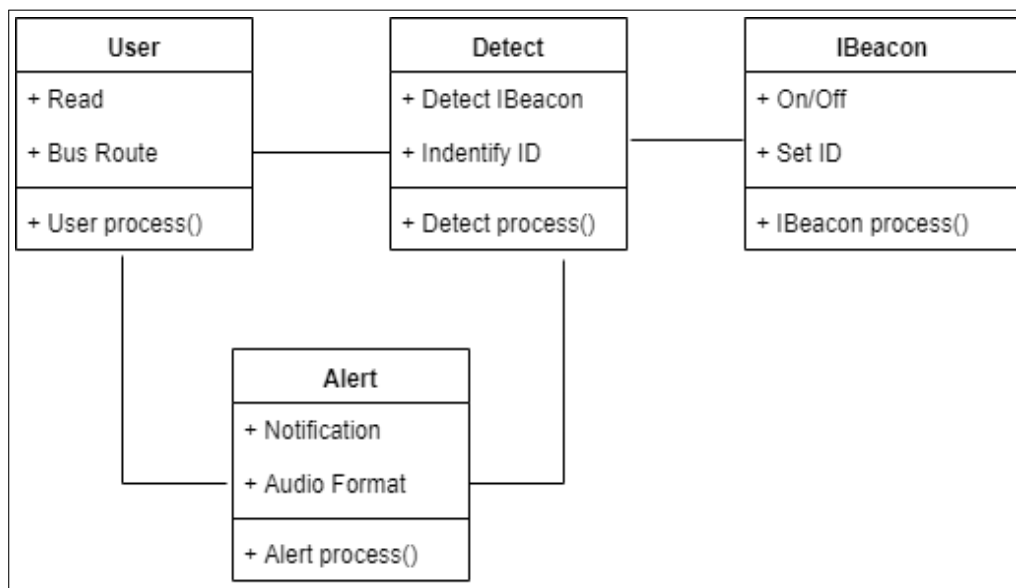


Fig. 2class diagram

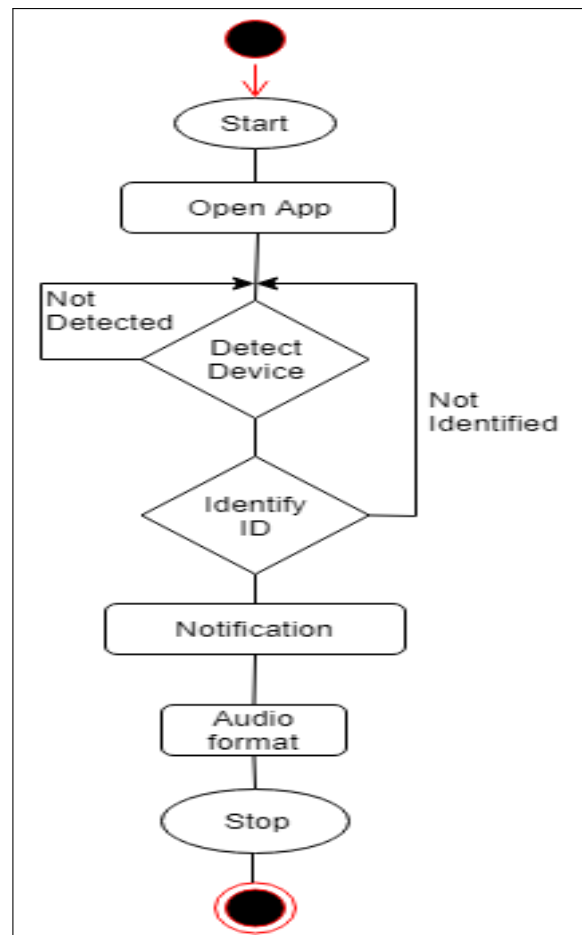


Fig. 2 Activity diagram

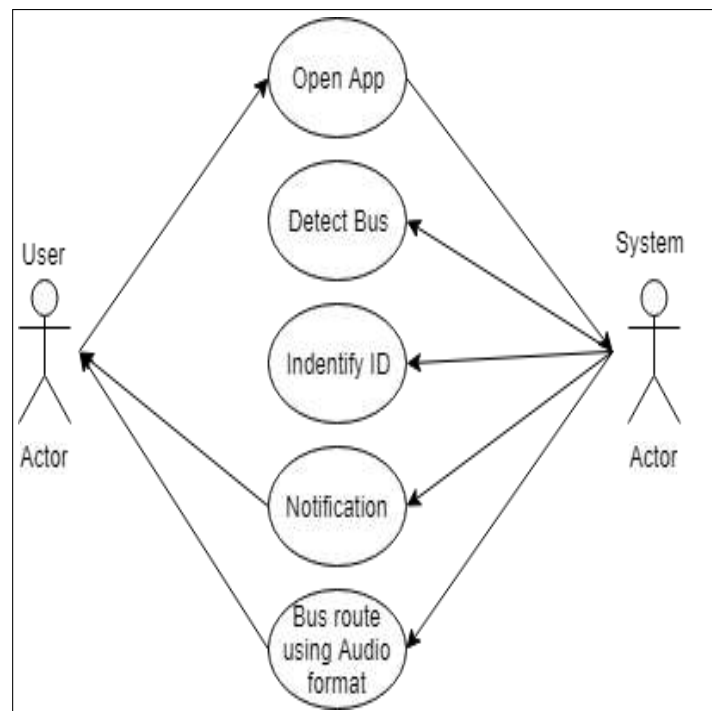


Fig. Use case diagram

Screen Shots



CONCLUSION

Thus we conclude, that to develop the smart bus system which helps the visually challenged people. We will made two apps one for the driver of the bus and for the user. The driver app is connected with a BLE (Bluetooth Low Enabled) beacon. Whenever corresponding destination bus is near the user, the beacon present in the corresponding bus will starts to broadcast the details about the bus to the user, when the bus runs under 10 kmph speed. iBeacon technology allows us to get information of the bus-route easily. The details contain current position of the bus, destination of the bus, and distance between the bus and the user. The main aim of our project is to help for the visually challenge people to reach their destination.

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