

A Route for Disabled Persons in Airways & Railways

Nitin Bhushan K N

Student, Electronics & Communication Engineering, T. John Institute of Technology, Bangalore, India
nitinbhushankn@gmail.com

Abstract— Travelling accessibility is the main problem occurred for the physically disabled persons in railway stations and airports, where they have to move few kilometres towards the platform and as well as move towards the runways? Recently the idea flashed in my mind after seeing such an incidence while I was travelling to Hyderabad. A disabled person was struggling to go towards the platform 7, as some few people came to help the person. Similarly I have read the article recently where some disabled struggled to get the wheelchair facility. So I have come up with an idea that is a route for the disabled person in railway station and in airports too. Physically challenged persons should always depend on the third person to travel from one place to another so, by using this idea they can independently travel anywhere, anytime. The idea is easy, flexible and handy to the handicapped person. It is a just a route from one platform to another with a controlling unit that is controlled by the person later the empty wheel chair is controlled by the supervised person at the platform.

Keywords:- Wheel Chair, Application, Sensors, Controlling unit.

I INTRODUCTION

The main purpose of this idea is to provide a safe and secure transport to the disabled persons and for the old aged people too, in railway stations and airports. The special wheel chair is controlled by the control unit in railway station where so many wheel chairs can be controlled under the guidance of few persons who are in charged to it. Similarly to the OLA and UBER cab facilities a special facility can be provided to the disabled person and elderly aged citizens by booking a wheel chair as they reach near the railway station or airport. So the ease of transport is fulfilled to both of them. The main objective is to design a wheel chair which provides a solution for the physically challenged people and elderly aged citizens as well, who cannot move by themselves. So by using this controlling wheel chair they can move anywhere. By using this idea not only physically challenged people and senior citizens can access the accessibility by themselves but others can also Access to it that is: Low vision persons, Blind persons with the help of the supervised person near the railway station control room. Ease of transport for the handicapped person

and senior citizens. The better solution for pregnant women's to travel from one platform to another. Wheel chairs extend the capabilities of traditional powered devices by introducing the control and intelligence. These wheelchairs can ease the lives of many disabled people, particularly those with severe impairments by increasing the range of mobility. The proposed idea can be made used with the help of the joy stick movement inbuilt in the wheelchair, and later the empty wheel chair is controlled by the control room.

II LITERATURE SURVEY

The recent several studies show that both disabled and senior citizens can be made beneficial from access to a means of independently. The need of many disabled and elderly senior citizens can be proved by providing a boon to them by giving a powered wheel chair and manually operated wheel chair so that one can travel independently anywhere, anytime. The need of 3rd person can be eliminated completely. Smart wheel chair facility is provided too few countries which are developed. For disabled persons independent mobility is a boon and plays an important role in the travel accessible. We provide a prominent role to the disabled by conducting a Para Olympics world wide but the same kind of prominence and priority should be given to the normal persons. According to research we have different types of wheel chairs like head control, eye ball control etc. But due to complexity in the operation of these kinds of wheel chairs we came across a normal controlled wheelchair. According to 2011 census we have across 2.63 million people of India with disability.

III PROPOSED SYSTEM

The proposed system consists of a normally controlled wheel chair and to support that an application is developed. So, that a wheel chair can be booked by the passengers, disabled persons, elderly senior citizens etc. It consists of Raspberry pie microcontroller, buzzer, joystick, sensors etc. The proposed system consists of 2 different units one for booking purpose and another for wheel chair working methodology.

- A. Transmitter module for booking purpose it has module application, Global System for mobile communication. For security purpose it should be encoded or encrypted. The system is used to store all the booking details with specific location details. As shown in figure 1.
- B. Receiver module is used to provide the confirmation message to the prescribed customer it consists of a

microprocessor as a system to store and access all the details, next process consist of a decoder for verification and authentication purpose, GSM for sending details and receive messages to the mobile application. As shown in figure 2.

simple that if we go near a railway station or an airport. We should book a wheelchair using a mobile application so that we are transmitting the data using a GSM module. The booking is done and we are about to reach the destination by that time the microcontroller is used to move the wheelchair with the help of DC motors in built into it, For tracking of wheelchair we need a camera or a GPS and a buzzer is added to it for recognizing purpose. Once the wheelchair is ready the disabled person must use the joystick on the wheel chair for further movement towards the platform, as soon as it reach a platform the supervisor must controller the wheelchair to bring it back to original position. Suppose if the person has low visible, half blind then the supervisor should take care of the movement of wheelchair.

Transmitter Module:

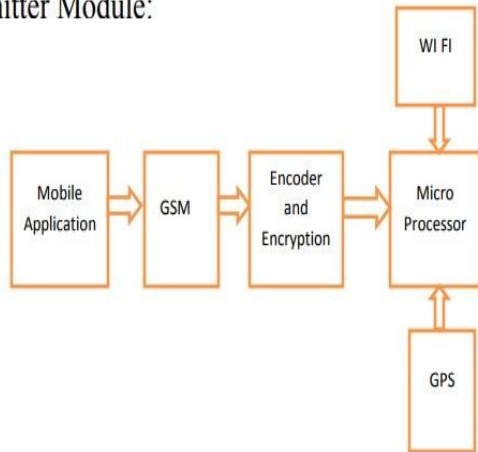


Figure 1 Transmitter module for booking.

Receiver Module:

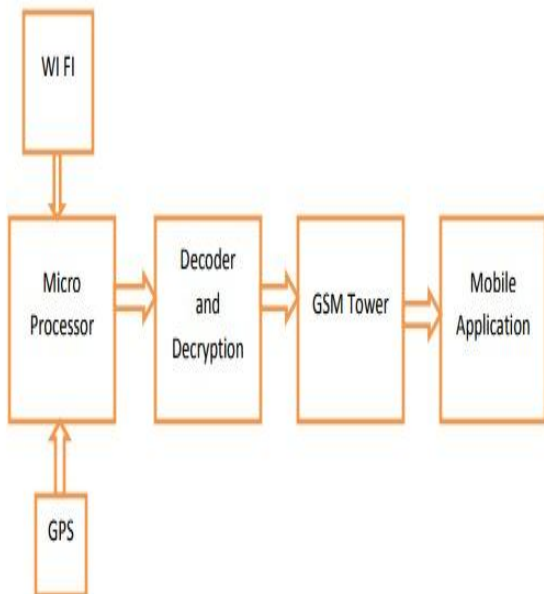


Figure 2 Receiver modules for booking purpose

IV SYSTEM DESIGN

The working system consist of a embedded system consist of wheel chair, Raspberry pie Microcontroller, Drivers, Sensors, Buzzers, LCD display, Power Supply, Accelerometer, Joystick etc. The working principle is so

It is built with two way operation such that the person he himself can operate or it should be done by the supervisor one should operate at a time to avoid confusion. In further the wheelchair can be made to work with voice sensor, accelerometer and infrared sensors as well. The two way control switch is used for the wheel chair is used because the young generation people know how does it work but the old generation people and the blind people doesn't know how to operate so it can be a better option to everyone. The path should be made separately as it is done for the electric car similarly to the wheel chair also the same idea can be implemented for better, easier and for the faster movement without any interrupt on the way towards platform. As shown in figure 3

booking a wheelchair.

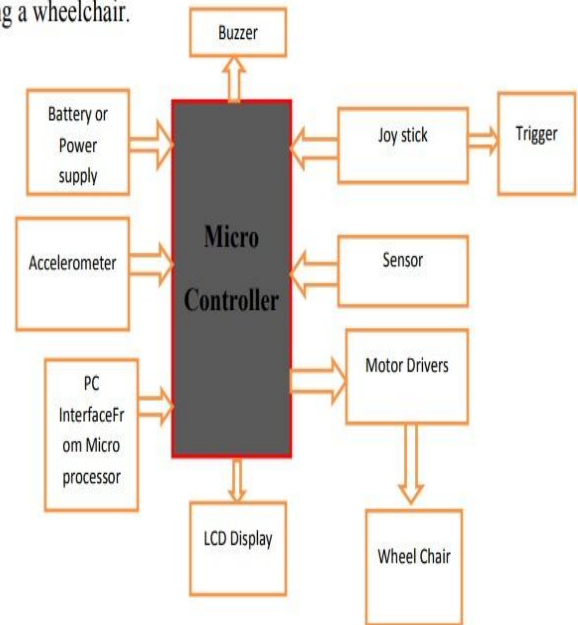


Figure 3 System Diagram

V RESULT

By using this proposed system design we can provide a boon to the disabled persons by helping them to avoid dependency on the third person. The transportation from

entrance to prescribed platform or to the prescribed gates in the airport can be made easy, smooth and accessible to all the people.

VI CONCLUSION

By using this simple idea we can provide a better accessibility to the one who is struggling to travel. It is cost effective and user friendly, accessibility can be made to everyone that is for the disabled person, senior citizen, low vision person, pregnant ladies and the one who is carrying small kids can definitely make use of this idea can fulfil the requirements. The main idea was to provide some sort of facility to the elderly aged person so that they can travel anywhere anytime without any dependency.

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BIOGRAPHY

Bachelor of Engineering, Electronics & communication, T. John Institute of Technology, Karnataka, India, Awarded 3rd Rank in STAND INDIA 2017 (<http://standindia.com>) National Level Competition organized by AICTE New Delhi.