Position Tracking And Path Guidance For Alzheimer Patients

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ABSTRACT

Our project is based onfield of wireless communication technology. Now a days many people are suffering from the disease like Alzheimer .Alzheimer's is a disease of the brain that causes problems with memory, thinking and behavior.The disease may cause a person to become confused, get lost in familiar places misplace things So by using Global Positioning system& GSM technology we are going to make real time tracking system. In this project we are going to make GPS based tracking system, for this we are using arduino,GPS,GSM.GPS will track the position of the patient. The information about place is stored in the memory of microcontroller. Microcontroller continuously compare the latitude &longitude co-ordinates coming from GPS.When at some place if co-ordinates match then the name of that place will be displayed on LCD.This co-ordinates are sent to the care taker's mobile using GSM module.

I.INTRODUCTION

The Alzheimer disease includes 60% to 70% memory loss this disease is normally seen in the age of 65 and more. At the first stage of disease person is unable to remember the names of friends,family members. After this stage patient will find problem concern with sleep &increased forgetfulness. Vocabulary of patient also going to change. Then there will be complete loss of speech and more confusion.

This disease is burden on patient as well as family member. familySometimes care taker has to give up his profession. There are few devices available with the microprocessor & wearable technology. Butthis devices are more expensive. This devices focus on the tracking using GPS technology which will give alert to caregiver when patient crosses particular boundary. The device then send co-ordinates of location to caretaker . Sometimes GPS system are not too accurate give correct location of patient.

For this we haveto think of both indoor &outdoor GPS system.some indoor GPS system are not accurate. Indoor system are based on many sensors as well as Wi-Fi technology.
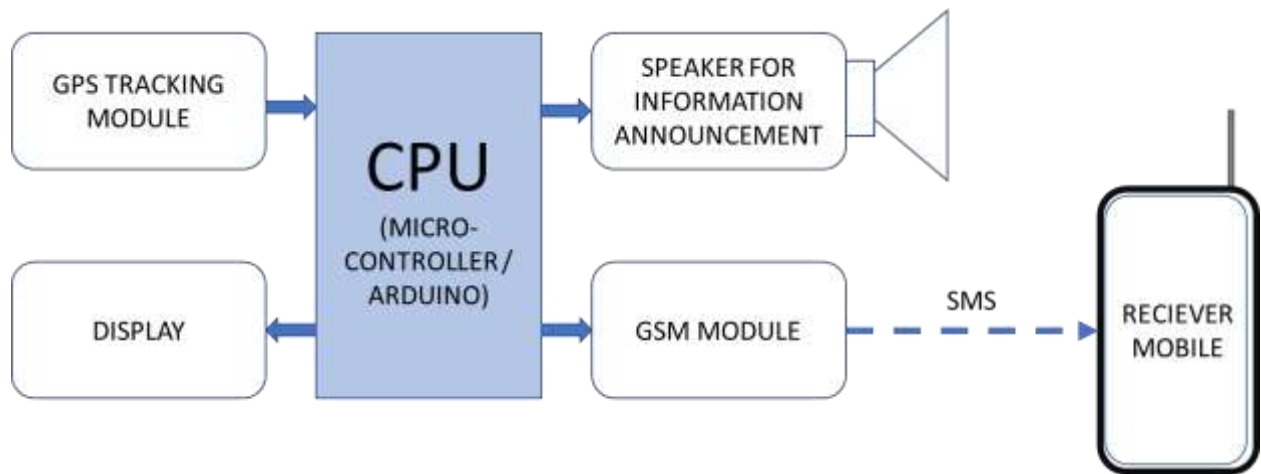
II.FIGURE

Figure1. Block diagram of Proposed Tracking and Guidance System

Here we are making the GPS based wireless tracking system with path guidance. For this we first store the co-ordinates coming from the GPS and the name of the place in to the memory. Also, we store the voice from the user which records the name and other information about the place which can guide the person wearing the device. After this as soon as the user wears the shoes and goes out, the μc continuously compares the latitude and the longitude co-ordinates coming from the GPS every second with the co-ordinates stored in the memory.

If at any place the co-ordinates match then for that particular place he can see the name and other details of that place on the LCD or he/she can hear the info about the place from the earpiece. Also, we are sending these co-ordinates to the base unit via the GSM module. The receiver's mobile receives these co-ordinates via GSM for informative purposes. Thus, the wireless device is a very efficient tool for path guidance and also for tracking the user wearing it.

The CPU reads the coordinates received via GPS. As soon as the GPS co-ordinates are received the CPU will compare the co-ordinates with the stored locations. A unique id's are to be given to all the locations. Using this id concerning wav file for co-ordinates will be played for user's information.

In this manner, we can create the database of few or many wav files to create our own voice library. The main advantage of the system is that we can have a multilingual system. This means that we can store the wav file in any language and play it back. The only thing is that the user has to enter the same name of the file.

III.COMPONENT DETAILS

GPS UNIT:

The NEO 6M / SIM 908 is a complete GPS engine module that features super sensitivity, ultra low power and small form factor. The GPS signal is applied to the antenna input of module, and a complete serial data message

with position velocity and time information is presented at serial interface with NEMA protocol or custom protocol. The small form factor and low power consumption make the module easy to integrate into portable device like mobile phones, cameras and vehicle navigation system. The GPS unit continuously sends the co-ordinates to the CPU. These co-ordinates are received and stored in µc memory.

ARDUINO:

The Arduino is an open source electronics prototyping platform by Google, based on flexible, easy to use hardware and software. It for artists, hobbyists, designers and anyone interested in creating interactive objects or environments. Arduino is best known for its hardware, but you also need software to program that hardware.

GSM UNIT:

GSM/GPRS modem-RS232 is built with dual Band GSM/GPRS engine-SIM900A, works on frequencies 900/1800MHz. the Modem is coming with RS232 interface, which allows you connect PC as well as microcontroller with RS232 chip(MAX232). The baud rate is configurable from 9600-115200 through AT command. The GSM/GPRS modem is having internal TCP/IP stack to enable you to connect with internet via GPRS. It is suitable for SMS, voice as well as DATA transfer application in M2M interface. The onboard regulated power supply allows you to connect wide range unregulated power supply. Using this modem, you can make audio calls, SMS, read SMS, attend the incoming calls and internet through simple AT commands.The GSM unit will receive instruction from CPU for specific task. Then it will send SMS to a predestinated number. The short message may contain information about current location of patient and also time information of journey if necessary.

IV.CONCLUSION

Alzheimer's is a disease of the brain that causes problems with memory. The disease may cause a person to become confused, get lost in familiar places .This system is useful for tracking the Alzheimerpatient. This will give the information about the position of the patient.this system send warning message to caretaker when the patient crosses particular boundary.Also it provides path guidance to the patient.

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