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SMART WALKING STICK FOR VIUALLY IMPAIRED PEOPLE

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ABSTRACT:

This paper proposes electronic stick for visually impaired people.Inorder to help the visually challenged people a study that help those people to walk more confidently is proposed. The different sensors like object sensors(ultrasonic sensors),humidity sensor, temperature sensor and light sensor are used. Speaker and volume control is used in the form the status to the blind people.GPS is used to track the blind people path and emergency conditions are transmitted to the neighbor through GSM based alarm system. This project is implemented by using the DSPIC30F2010 controller.

I. INTRODUCTION

In the existing methodology IR sensor are used for obstacle. RFID is used mostly in the existing system, the main disadvantage of RFID is tag collision and reader collision., ARM processors having low operating frequencies compared to DSPIC30F2010.In the existing projects temperature, water level indication feature only used ,but

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in our project we added special feature of light indication. In the existing methodology IR sensor are used for obstacle detection. RFID is used mostly in the existing system , the main disadvantage of RFID is tag collision and reader collision. ARDUINO, ARM processors having low operating frequencies compared to DSPIC30F2010. In the existing projects temperature, water level indication feature only used, but in our project we added special feature of light indication.

KEYWORD:RFID,ARM Processor,DISPIC3OF2010.

LITERATURE REVIEW:

Smart Electronic Stick for Visually Impaired Roopashree .B.S .Bindiya.S , PatilShruthi B.R Roopashree.2015.GPS and GSM are used to acquire the exact location of the blind person at times of emergency and send the coordinates to his relatives or care taker.Design of Microcontroller based Virtual eye for the blindPooja Shame'sSimi S. L, Dr.S.Chatterji 2014.The ultrasonic sensor is reflect the waveform and this signal received from the barrier objects are used as inputs to Arduino microcontroller.A Survey of Voice Aided Electronic Stick for Visually Impaired People Gurubaran Gowrishankar Kasilingam, Mritha Ramalingam,2014 Using GPS technique easy to identify the position and location of the blind person.Smart Cane for Visually Impaired Person by Using Arduino Ramesh Satpute, Mohsin Mansuri, Dnyaneshwar Kulkarni 2016 This is using 3 emergency button any problem blind people click the button the message send the doctor or family members Automated Help aid for Visually Impaired People using Obstacle Detection and GPS Technology V. S. Kaushalya,An economically viable product which used open source was the key element to

developing our prototype. D. P Premarathne, H. M. Shadir P. Krithika, G.S. Fernando , 20163D Ultrasonic Stick for BlindOsama Bader AL-Barrm, Jeen VinouthJan 2014 GPSsystem provide the information regarding the location of the blind person using the stick to his family members.Ultrasonic and Voice Based Walking Stick for Blind People D.Sekar, S.Sivakumar, P.Thiyagarajan, R. Premkumar, M. Vivek kumar&2016 In this system, ultrasonic sensor, temperature sensor, humidity sensor, GPS receiver, vibrator, voice synthesizer, speaker or headphone, PIC controller and battery are used.A Survey of Voice Aided Electronic Stick for Visually ImpairedPeople Gurubaran, Gowrishankar Kasilingam, Mritha Ramalingam&2014 For security purpose, thumb print scanner is used which activates the stick when the particular blind people access using their thumb prints. Thus this stick might not be misused by others

God gifted sense of vision to the human being is an import life.But there are some u unfortunate people who lack the ability of visualizing things. Blind stick is an innovative stick designed for visually disabled people for improved navigation. The paper presents a theoretical system concept to provide a smart ultrasonic aid for blind people .In this developed system is intended to provide overall measures – Artificial vision and object detection Ultrasonic sensors are used to calculate distance of the obstacles around the blind person .Output is in the form of sequence of beep sound which the blind person can hear.

In this system, ultrasonic sensor, temperature sensor, humidity sensor, GPS receiver, vibrator,

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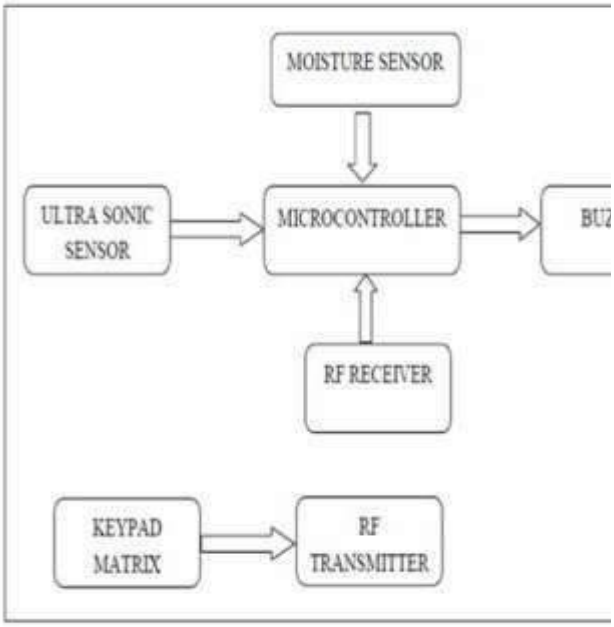
voice synthesizer, speaker or headphone, PIC controller and battery are used. The APR9600 device is used in this project and it offers true single-chip voice recording, non-volatile storage, and playback capability for 40 to 60 seconds. PIC16F887 microcontroller is used in this proposed project

BLOCK DIAGRAM FOR EXISTING SYSTEM:



ULTRASONIC SENSOR:

An ultrasonic sensor is a device that can measure the distance to an object by using sound waves.

RF MODULE:

RF module is small electronic circuit, it is used to transmit,receive or transceive radio waves on one of a number of carrier frequencies.

BUZZER:

The Piezo buzzer produces sound based on reverse of the piezoelectric effect. The generation of pressure variation or strain by the application of electric potential across a piezoelectric material is the underlying principle. These buzzers can be used to alert a user of an event counter signal or sensor input. They are also used in alarm circuits.The buzzer produces a same noisy sound irrespective of the voltage variation applied to it. It consists of piezo crystals between two conductors. When conductor and pull on the other. This, push and pull action, results in a sound

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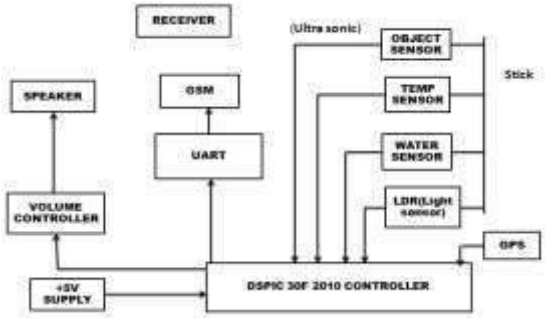
wave. Most buzzers produce sound in the range 2 to 4K

BLOCK DIAGRAM FOR PROPOSED SYSTEM:



GPS MODULE:

TEMPERATURE SENSOR:

GSM MODULE

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HUMIDITY SENSOR

ULTRASONIC SENSOR:

WORKING:

The smart walking stick is integrated with ultrasonic sensor along with light,water and temperature sensor.Our proposed project first uses ultrasonic sensors to detect obstacles using waves.On sensing obstacles the sensor passes this data to the microcontroller. Ifthe obstacles is not that close the circuit does nothing. If the obstacle is close the microcontroller sends the signal to sound buzzer. It also detects water and temperature for the blind. One or more feature is that allow the blind person to detect if there is light or darkness in that place. The system has one more feature integrated to help the blind to find if they are missing, it has two buttons blind person click the buttons means, information will send to the particular person where they are. Then the person was send the information to the blind by this way they can easily understand if they are missing.

EXPECTED RESULT:

We propose a Smart aid electronic stick for blind with GPS and GSM system with ultrasonic, humidity , temperature and light sensors. We include special feature,whenever there is any emergency the blind people need to press the trigger button which

activates the GPS and GSM. GPS identifies the location of the blind person and is sent alert message via GSM. An alert message will be sent immediately along with the exact location of the blind person to the receiver. Ultrasonic sensors with voice recognitionare used to detect obstacle .

V. CONCLUSION

The electronic guide stick that helps the visually impaired patients to move around freely. They wouldn't need human dependence as this system makes them independent. The sensors uses in this paper are highly accurate and sensitive. They provide exact readings of obstacles and distance to be travelled. The GPS and GSM modules used to provide the location of the patient and thus help the patient in time of need by sending an emergency messaging. The speaker helps in human-machine interface by sending the signals to the patient about obstacles and route to be travelled. For simplicity and understanding of the patient is provide two separate speakers. We conclude by saying that this is a step taken to make visually impaired patients to lead an independent life and help them move around freely

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