

## **ANDROID-BASED NAVIGATION SYSTEM FOR ELDERLY PEOPLE IN HOSPITAL**

### **ABSTRACT**

Embedded Technology is now in its prime and the wealth of knowledge available is mind-blowing. However, most embedded systems engineers have a common complaint. There are no comprehensive resources available over the internet which deals with the various design and implementation issues of this technology. Intellectual property regulations of many corporations are partly to blame for this and also the tendency to keep technical know-how within a restricted group of researchers.

The uses of embedded systems are virtually limitless, because every day new products are introduced to the market that utilizes embedded computers in novel ways. In recent years, hardware such as microprocessors, microcontrollers, and FPGA chips have become much cheaper. So when implementing a new form of control, it's wiser to just buy the generic chip and write your own custom software for it. Producing a custom-made chip to handle a particular task or set of tasks costs far more time and money.

Many embedded computers even come with extensive libraries, so that "writing your own software" becomes a very trivial task indeed. With the increase in the number of elderly people, a guidance system that can be used for medical examination in hospitals becomes to attract attention. As a position estimation technology for indoor guidance, a Wi-Fi positioning system has been studied. However, Wi-Fi radio waves are not available in the hospitals because that affect operations of medical equipment.

## PROPOSED SYSTEM

We propose a new real-time indoor guidance system using Personal Handy-phone System (PHS) and Android device for visitors in hospitals. Our proposed system utilizes a combination of Received Signal Strength Indication (RSSI) of PHS and Dead Reckoning based on sensors of an Android device in order to estimate a user's indoor position without affecting operation of medical equipment. Through the experimental evaluation, we have clarified that the proposed system has successfully guided subjects to the destinations with accuracy of 93.3[%].

## BLOCK DIAGRAM

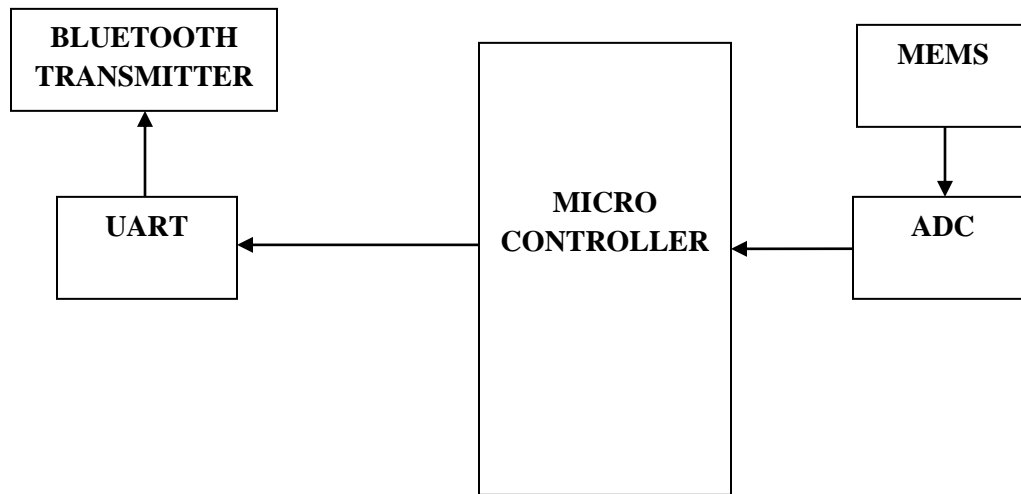
### 1. RECEIVING END

#### 1.1.1 ROOM 1



#### 1.1.2 ROOM 2





## HARDWARE REQUIREMENTS

- MICROCONTROLLER
- UART
- BLUETOOTH
- PC
- MEMS
- ADC

## SOFTWARE REQUIREMENTS

- Microcontroller Compiler
- PROTEUS SOFTWARE

Microcontroller May be ATMEGA,8051 OR PIC