A Research on Computational Technique in Vehicle Based Wireless Communications Systems

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Abstract— **The use of mobile phone trend to be common to all. Even though there are some contravenes while utilization of a mobile. Nowadays people using mobile phones while they are in driving. It may cause an major accidents. A wires communication medium would be minimize these kind of disasters. In this Proposed model consists of two devices mobile and vehicle section . The starting of vehicle gives the information to mobile by means of RF transmitter, then the mobile immediately changes into Driving mode. Once if mobile receives a call, it attends and gives the information in the form of an voice or audio, if the call is emergency only means it will inform the driver through ringing. Moreover the speed of the vehicle will be decreased when the user attend the call.**

Index Terms— **Driving mode, vehicle section, mobile section, Emergency call**

INTRODUCTION

In this a concept proposed an adaptive hands free technique for mobile communication systems. It consists of two devices former the vehicle section once start the ignition the RF signal transfer's from the vehicle to mobile immediately it changes to Driving mode. If mobile receives the call, it attends and gives the voice information, if the call is emergency only means it will inform the driver through ringing.

GSM Modem is interfaced with the microcontroller through RS232 converter. RS 232 converter is used to convert any logic to TTL logic vice versa because GPS receiver is the RS232 logic and microcontroller is the TTL logic. Here the microcontroller is the flash type reprogrammable microcontroller in which we have already programmed. Then dialing information signal is transmitted through GSM network or mobile.One of the major reasons for number of

accident that are happened by using mobile phones while driving. It hardly matters whether the person makes use of hands free or hand-held phones, there's no escape to it. This deadly combo has significantly increased the risk of accidents

in large numbers. To overcome these situations we are introducing a hands free technique.For all the process we are using two domains the first one is the embedded system for assigning the task. The later is wireless communication for the transfer of data.

Mobile phone use while driving is common but controversial. Being distracted while operating a motor vehicle has been shown to increase the risk of accident. Certainly there has been large number of figures that shows that people have used their mobile phones just before their accidents. Studies have shown that if people reduce their usage of cell phone while driving, it can cut off the accident rates too. So next time if your cell rings, make sure to answer your phone call only after when you reach your destination and not in-between the way.

II. SYSTEM ANALYSIS

A. EXISTING SYSTEM

In this section explains the system which is existing in now a day. The following methods contribute to make a mobile as in silent mode.

1. Muting Mobile in silent mode.
2. Voice Mail Converter

Even though the cell phones while driving puts a driver at a significantly higher risk of collision by distracting his or her mind. This deadly combo has significantly increased the risk of accidents in large numbers. The problem in the existing project is the person who is in driving meet with an accident by using mobile phones on the road traffic. Even though they are aware of results which are happening by using mobile phones, they are not ready to give ear-piece to avoid such an incidents. So we are trying to control and prevent this case by automatically in embedded applications

B. PROPOSED SYSTEM

In this section the Mobile receives the call, it attends and gives the voice information, if the call is emergency only means it will inform the driver through ringing.The following aspects are proposed for these techniques.

1. Automatic attends of the call.
2. Gives information about the Driver.
3. Only Emergency Call will connect to the User.

In our project two sections are used. The first one is mobile section which controls the incoming call to the person who is in driving. The second one is vehicle section which controls the ignition starter after attending the call by driver. It rapidly decreases the speed of the vehicle and stops the vehicle at last.

Here the Figure 5.1 represents the Block diagram of dash board section. In this the process verification unit is nothing but the microcontroller unit. The transmitter/receiver section indicates the RS 232. If the transmitter receives the signal from the microcontroller unit means immediately it will sends the signal to mobile and it will changes the mobile as in driving mode.

This process begins when the vehicle is start. Normally the ignition starter will control the speed of the vehicle. Due to this concern the control of the mobile unit takes place by ignition starter.

C.MICROCONTROLLER (PIC16F877A)

It is one of the microcontrollers in PIC family. Normally PIC16F873A/876A devices are available only in 28-pin packages, while PIC16F874A/877A devices are available in 40-pin and 44-pin packages.

The PIC16F877A features 256 bytes of EEPROM data memory, self programming, an ICD, 2 Comparators, 8 channels of 10-bit Analog-to-Digital (A/D) converter, 2 capture/compare/PWM functions, the synchronous serial port can be configured as either 3-wire Serial Peripheral Interface (SPI) or the 2-wire Inter- Integrated Circuit (I2C) bus and a Universal Asynchronous Receiver Transmitter (USART).
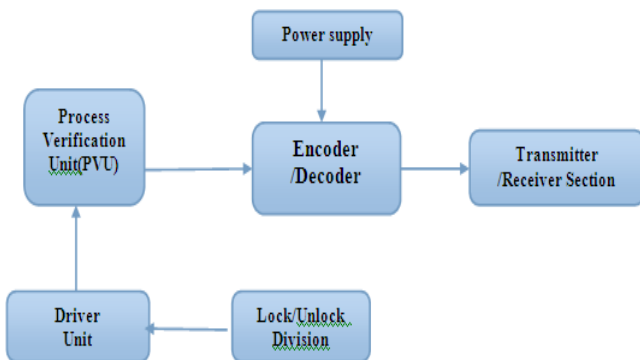
D. BLOCK DIAGRAM

1)Dash Board Section

Fig 1. Block Diagram of Dash Board Section

The Dash board section consist of Power supply, Encoder and decoder unir, Transmitter and receiver section, Process verification unit, Driver select unit and finll Lock/Unlock Division which is shoen in Fig1.

2)   Mobile Gadget

The former section Consists of Ignition Starter, the microcontroller gives the signal to the mobile. When the signal is received by the mobile it immediately changes in to Driving Mode. From the Fig.2 indicates the Block diagram of mobile gadget section. In driving mode, if someone is calling

it automatically attends the call and gives response only for the emergency call. If mobile receives the call, it attends and gives the voice information, if the call is emergency only means it will inform the driver through ringing.

GSM Modem is interfaced with the microcontroller through RS232 converter. RS 232 converter is used to convert any logic to TTL logic vice versa because GPS receiver is the RS232 logic and microcontroller is the TTL logic.
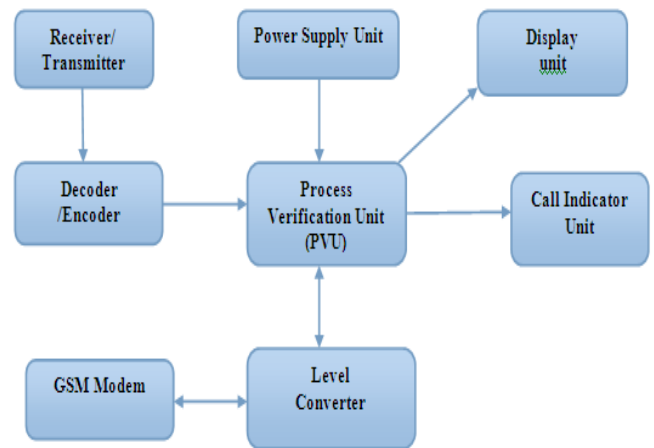

Fig 2. Block diagram of Mobile Gadget Section

Here the microcontroller is the flash type reprogrammable microcontroller in which we have already programmed. Then dialing information signal is transmitted through GSM network or mobile.An adaptive hands free technique mainly applicable for Mobile with vehicle applications like car, bus, trucks etc. And also it gives the idea to all mobile communication sectors that are providing the GSM/GPRS systems.

Here we use a microcontroller from PIC family which is PIC16F877A. Because The PIC16F87XA devices have a 13-bit program counter capable of addressing an 8K word x 14 bit program memory space. Instead of serial communication we use MAX 232. The MAX232 is a dual driver/receiver that includes a capacitive voltage generator to supply TIA/EIA-232-F voltage levels from a single 5-V supply.

E. SOFTWARE TOOLS

1) MPLAB IDE
This is the software used to transmit the signal between mobile and vehicle section.   MPLAB Integrated Development Environment (IDE) is a comprehensive editor, project manager and design desktop for application development of embedded designs using Microchip PIC micro and DS PIC microcontrollers.
2) EMBEDDED C
It is the application software used to make a voice alert in mobile communication unit.
3) PICKIT2
It is the software used to control and monitor the process of

PIC microcontroller.

   4) ORCAD

It is the software use to design the schematic diagrams which are used in mobile gadget section and vehicle ignition section. ORCAD Capture is a complete solution for design creation, management, and reuse. Its ease-of-use allows designers to focus their creativity on design development rather than tool operation. The hierarchical Schematic Page Editor combines a windows user interface with functionality and features specifically for design entry tasks and for publishing design data.

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III. SYSTEM TESTING AND IMPLEMENTATION

In this project Consist of two sections as mentioned earlier. The mobile section is tested and implemented by using Kiel ID µ-3 software which is executed by Embedded C language. The snapshot of mobile section and vehicle section is shown in Figure 3 and Figure 4 respectively.
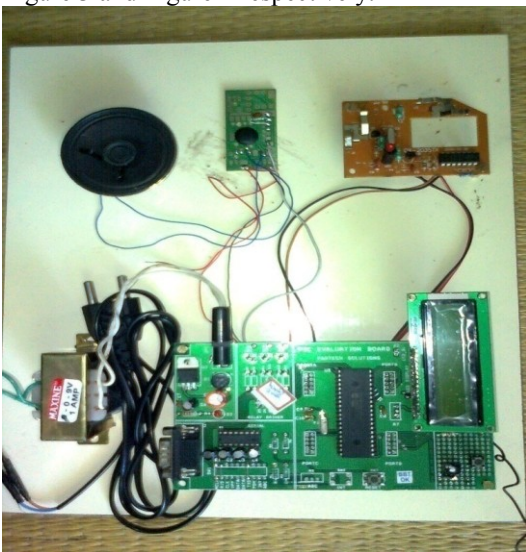

Fig 4. Vehicle Section

Fig 3. Mobile Section

The vehicle section is tested and implemented by using MP Lab IDE software which is executed by Embedded C language.The vehicle section is tested and implemented by using MP Lab IDE software which is executed by Embedded C language. Helpful Hints.
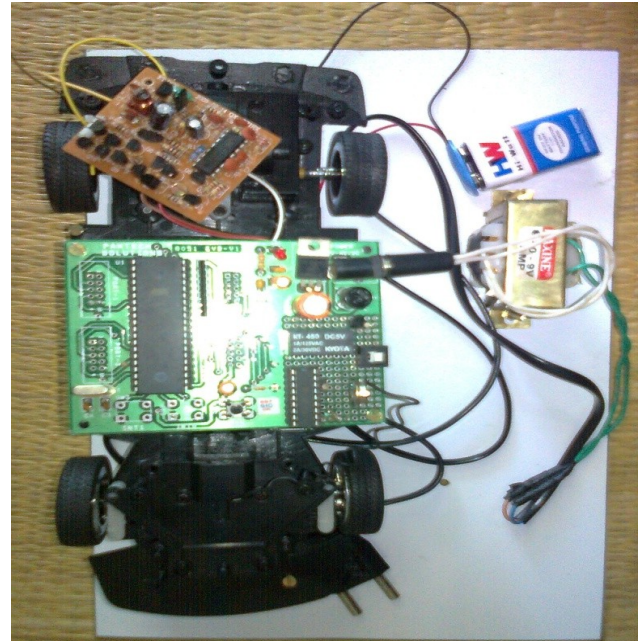
Here, the implementation of mobile section is successfully executed with the help of Kiel ID µ-3 software. As we expected it will give the information about the person who is in driving. The result shown that "person is in driving" is the command given by voice module to the caller. In case of emergency the caller will try once again and it will connect to user and the vehicle will rapidly slow down. The number will be displayed in LCD Display That is shown in Fig 5.

The Figure 6 shows that the result of mobile section which undergoes testing and implementing. Similarly, vehicle section is also implemented and burn within the chip itself. It can be verified during the time of hardware implementing period.
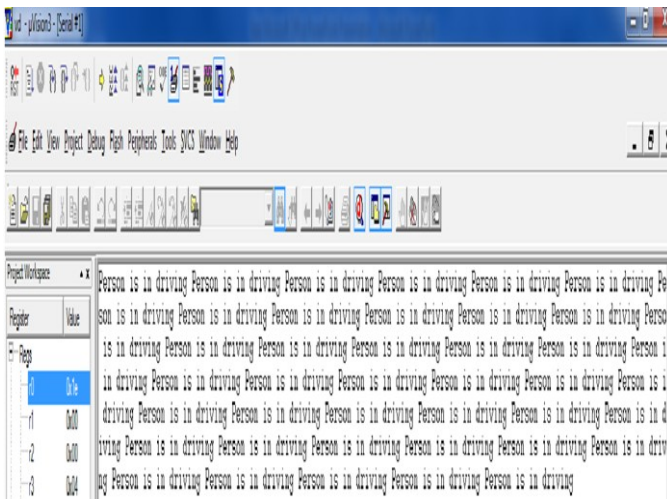

Fig 5. LCD Display

Fig 6.Output of Mp Lab IDE for Vehicle Section

The vehicle section is tested and implemented by using MP Lab IDE software which is executed by Embedded C language That is shown in Fig 6.

IV.CONCLUSION

Here, the implementation of mobile section is successfully executed with the help of Kiel ID µ-3 software. It will give the information about the person who is in driving. The result shown that "person is in driving" is the command given by voice module to the caller. In case of emergency the caller will try once again and it will connect to user and the vehicle will rapidly slow down. The result of mobile section which undergoes testing and implementing. Similarly, vehicle section is also implemented and burn within the chip itself. It can be verified during the time of hardware implementing period. From the above This Optimized method will serve major role in traffic affairs and probably the use of mobile in driving will come to end.

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BIOGRAPHY

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