

Approach to Prevent Accidents While Speaking During Driving and Methods Providing Security to Mobile Phone

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Abstract:

Stealing cell phone has become the eye-catching business for culprits. There should be a reliable method of protecting the mobile instrument from burglars. To overcome this problem biometrics technology can be implemented on mobile phones. Our research also includes, preventing the user from talking in mobile phones while the user is in driving.

The research basically consists of three modules. Scholar

(A) Protection of Mobile Phone Using Fingerprint Recognition.

(B) Protection of Mobile Phone Using Voice Recognition.

(C) Dual Mode Mobile Phone for Preventing Accident During Driving.

Keywords: *Mobile Phones, Voice Recognition, Security, stealing, Finger Print*

(I) PROTECTION OF MOBILE PHONE USING FINGERPRINT RECOGNITION.

In the fig(A) we propose a secured mobile phone method which helps in reduction of mobile phones theft, increase in security and it also prevent unauthorized user accessing the mobile. The block diagram of secured mobile phone is shown in figure(A) below.

FIG (A) SHOWS SECURED MOBILE PHONE.

When user wants to purchase the mobile, the mobile manufacture has to take the finger print of the owner and it must be stored permanently in the database of the mobile. The database here can be either ROM or Smart cards. This image will be used in future for the verification of the authorized user.

Whenever the user wants to operate mobile, he/she should press is thumb on the scanner. Once the scanner catch the user's thumb it will be stored in an EPROM (temporary memory). This thumb impression is compared with original or permanent thumb impression which is stored in ROM by using image comparator. If both of the impression matches, it sends a signal to MEMS (MicroelectroMechanicalsystem) motors which help in opening the door of the mobile. If an impression fails to match, then corresponding signal will be generated from image comparator, which in turn helps in glowing red LED (Light Emitting Diode).

For this operation of battery of 1.5 volts is required. A microcontroller can also be used to control each and every device.

RECENT SURVEY

A survey of US mobile phone users revealed that most of them want biometric protection and wireless banking transaction capability in their mobile phones, a report released on 5-4-2006(Tuesday) in itnews.com .Noting that biometric and m-commerce applications are already popular in Asia, AuthenTec, which sponsored the survey, said 58 percent of the US mobile phone users polled said they would purchase a phone with those services. And 47 percent said they would switch services to get the features.

Fingerprint sensors for protection of stored content, appeared to appeal to most of the polled users; 73 percent said they want phones equipped with fingerprint sensors. To use a fingerprint sensor, it is sufficient that user simply swipes press a thumb on the scanner. The survey was conducted on (march-2006) by independent online service Zoomerang, AuthenTec said.

(II) PROTECTION OF MOBILE PHONE USING VOICE RECOGNITION:

At first original voice database of the user is created. This database is stored in the Flash ROM (8M) which is available inside the cell phone. Then whenever the user speaks through the cell phone part

of the speech sample is taken and encoded. This processed voice of the user is compared with the original database to check the identity of the user. If the user is authorized, he is allowed to continue his talk. If not the transmission is cut abruptly by making the MP in idle state. Thus the cell phone is being protected from any unauthorized user. Even if the cell phone was stolen or missed it won't be useful for any other person. A diagram of a typical voice recognition process is shown in Figure(B).

FIG(B): VOICE RECOGNITION PROCESS

(III) DUAL MODE MOBILE PHONE FOR PREVENTING ACCIDENT DURING DRIVING:

In today's world, mobile phone has become one of the essential part of our day-to-life. Even though the mobile phone has much compensation, it becomes dangerous to our life, when the user tries to attend or talk with mobile during driving. In this paper we propose a dual mode system, which prevent the user from talking in mobile during driving and also provide safety to the user.

SPEED MEASUREMENT:

Even though many countries has ban or fined for the usage of cell phones during driving. Most of the drivers not following that in order to avoid that we have proposed a system which help in obeying the government rules at the same time helps in preventing accidents which occurs because of taking in mobile during driving. Our proposed system is shown in figure (C).

First of all, the user should have speedometer in his bike, which is used to measure speed of the vehicle. And then by using Transducer and Digital to Analog converter (DAC), this speed information is converted into an analog form and then analog to digital converter (ADC) is used along with proper encoding technique, then the obtained information is encoded and again it is converted into analog signal and then by using transmitter the signal is transmitted in air.

At the receiver end or mobile unit, a separate antenna can be used which receive information from the transmitter and then the received signal is converted into digital form which should be given to decoder followed by transducer. Which helps in convert the signal in to digital number and hence speed information is achieved.

DRIVING MODE:

The driving mode in cell phone enables automatically when he actual speed exceeds from the threshold speed. The main purpose of driving mode is that, when the person tries to make a call to a person who is in driving then the calling person will receive a message from service provider indicating that "person is in driving" at the same time, as soon as the speed exceeds the threshold the mobile will convert any mode (vibrate, ring, loud) to silent mode .So that the person who is in driving will not get disturb. The people who are all called to mobile can be seen after finishing driving.

NORMAL MODE:

The normal mode in cell phone enables automatically when he actual speed not exceeds from the threshold speed. In normal mode the mobile will operate as usually.

LITERATURE REVIEW:

In order to avoid accidents because of using cell phones during driving. In earlier days most of the cell phone manufacture provides hand hold cell phones which makes user to communicate with other.

Because of hand hold cell phone it becomes very difficult for user to talk while driving which in turn ends in accidents. In order to avoid this both cellular equipment manufacturers and the CTIA frequently remind users safety is their primary responsibility. So the cellular industry in general has placed considerable emphasis on safety. In addition, manufacturers of cellular accessories have specifically targeted safety in their products. The manufacturers clearly recognize the potential risks of in-vehicle cellular telephone use. As a remedy, they encourage the use of hands-free equipment in motor vehicles, along with use of memory-dial capabilities and voice activation features. In addition, the industry emphasizes the safety benefits and the sense of security that can accompany cellular telephone ownership. At the same time, the industry has continued to improve the ease of use features for drivers.

Even though the hands-free equipment is used know days. It has been shown that talking on cell phones are just as inattentive or likely to get into accidents as drunk drivers, even if they're using hands-free devices, according to a study published Thursday in the journal Human Factors.

RECENT SURVEY:

Those who talk on cell phones while driving are 5.36 times more likely to get into an accident than

undistracted drivers and using cell phones while driving has been proven to be a distraction causing significantly reduced reaction times, inattention and driver mistakes," a statement from Navy Region Southwest read.

According to US researchers, "If you put a 20-year-old driver behind the wheel with a cell phone, their reaction times are the same as a 70-year-old driver who is not using a cell phone".

Researchers from the University of Sydney said that "Once drivers on cell phones hit the brakes, it takes them longer to get back into the normal flow of traffic,". And braking time slowed 18% when young or elderly drivers used a cell phone. And chatting on the telephone caused a 12% greater following distance, apparently an effort to compensate for paying less attention to the road. And there was also a twofold increase in the number of rear-end collisions when drivers were conversing on cell phones.

CONCLUSION:

Today, it is an efficient and effective method of replacing passwords, tokens and smart cards. At the same time there is an exponential increasing in thefting of mobile phones. So if we this above proposed technique (I & II), mobile phones theft can be avoided at the same time it also provides security to personal data.

By implementing the module III, we can conclude that, life is more precious than anything in the world. By implementing the above proposed technique (C) speaking on mobile phone during driving can be avoided. This method can be adopted universally to prevent accident arising because of talking in mobile phones during driving.

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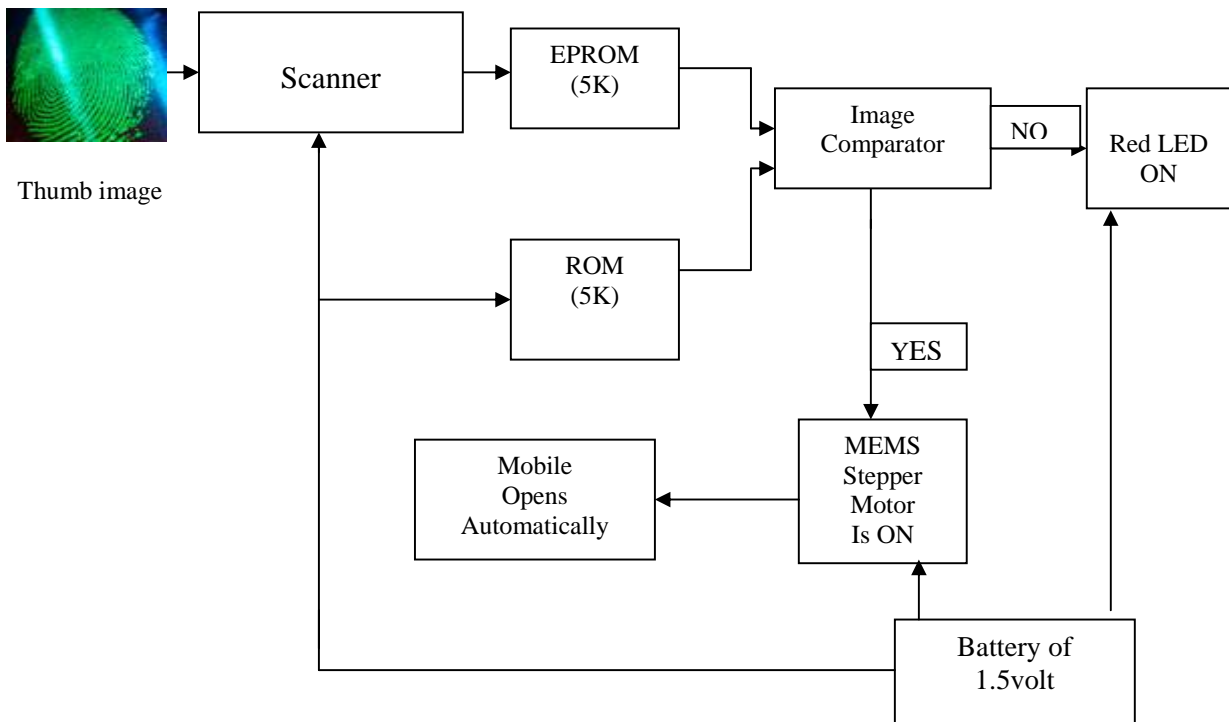
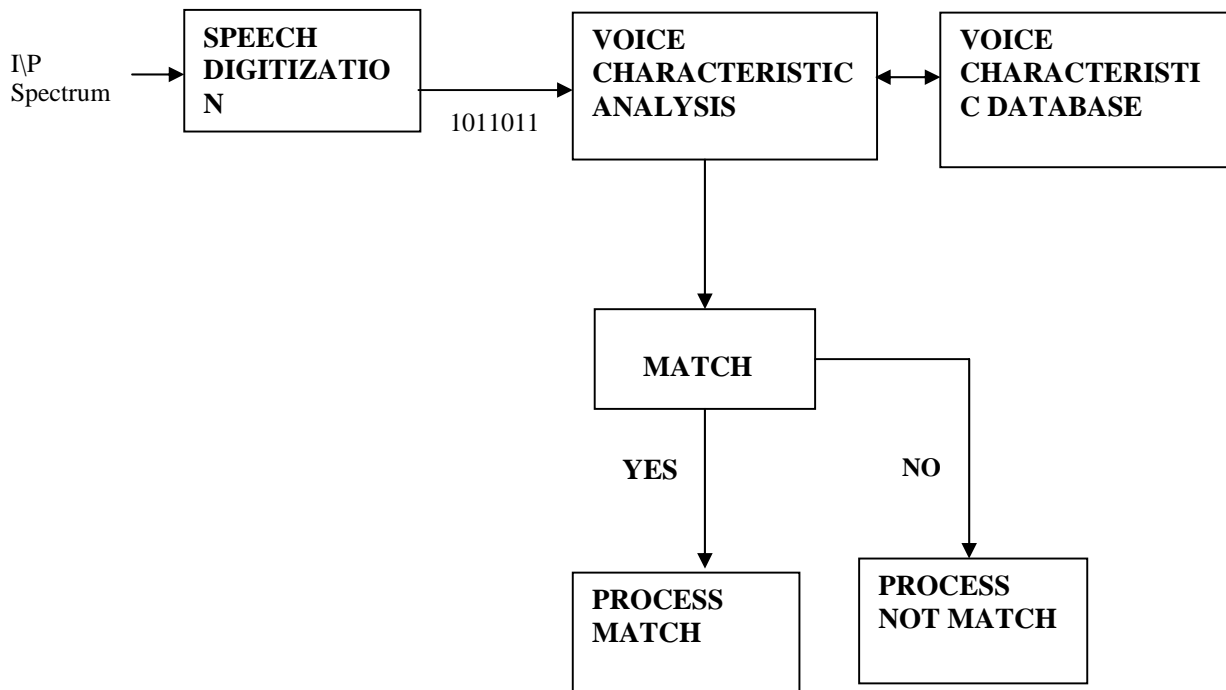


FIG (A) SHOWS SECURED MOBILE PHONE.



FIG(B): VOICE RECOGNITION PROCESS

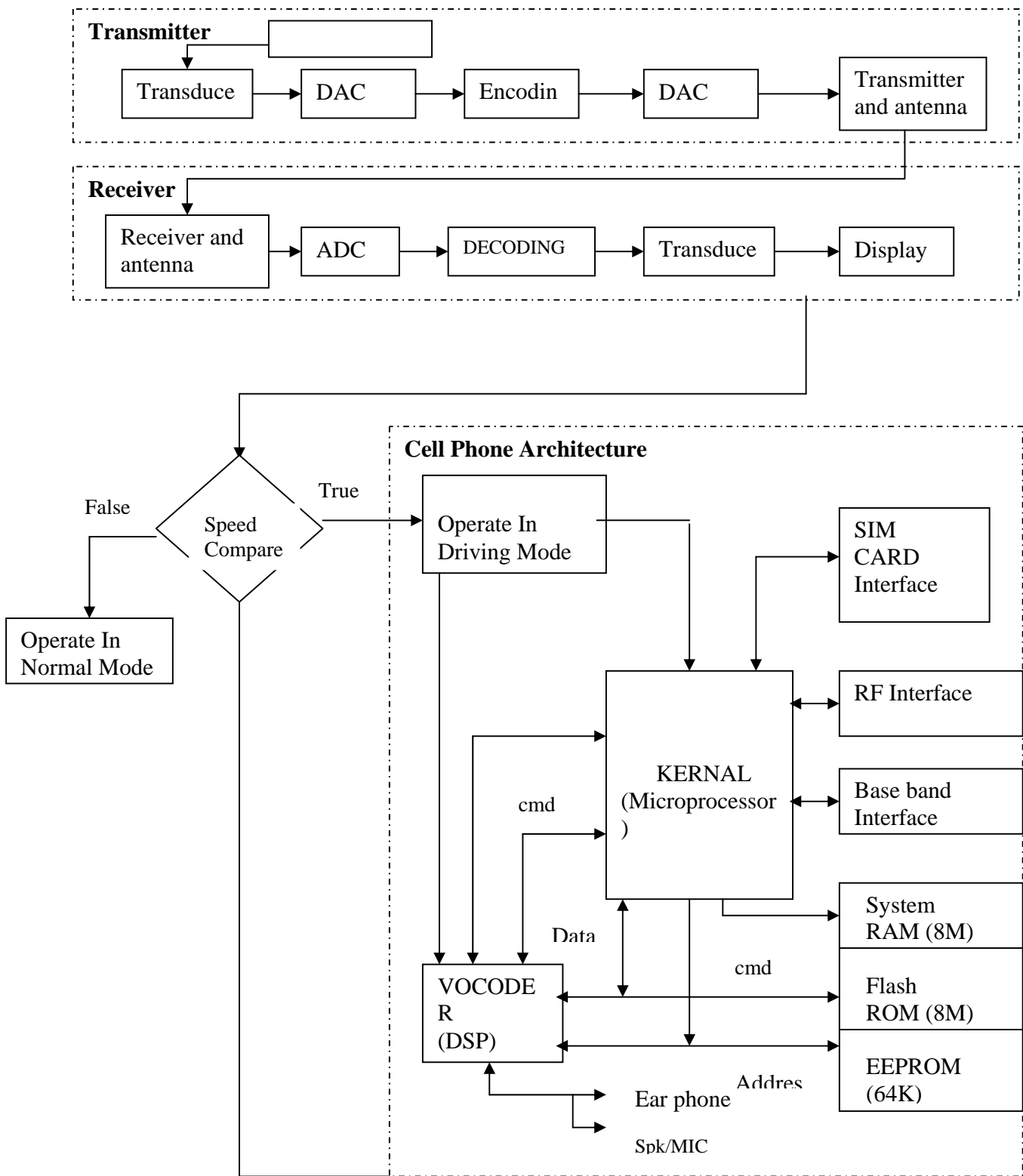


FIG: (C) DUAL MODE MOBILE PHONE FOR PREVENING ACCIDENT DURING DRIVING